

**THE RAILWAY GAZETTE**  
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**TO CALLERS AND TELEPHONERS**

Until further notice our office hours are:—

Mondays to Fridays - 9.30 a.m. till 3.45 p.m.

The office will be closed on Saturdays

**The Government Road Transport Scheme**

AN important step designed to increase the efficiency of goods transport for war purposes was announced by the Ministry of Transport on January 23. The broad principles of the new scheme, which affects road transport, have been formulated in collaboration with the Road Haulage Consultative Committee set up by the former Minister on August 7 last for the purpose of maintaining continuous contact between the industry and the Ministry. The Ministry of Transport will operate the scheme with the assistance of qualified men experienced in the industry who will be invited to join the Ministry for that purpose. Under this scheme the Government will hire vehicles primarily to carry traffic on Government account. The running and maintenance of the vehicles will remain in the hands of the owners, but an official organisation is to be set up, staffed partly by Civil Servants and partly by the experts taken from the industry, to control traffic operation. By these means it is felt that it will be possible to give ready priority to the rapid movement of Government goods and to ensure that full and continuous use is made of the carrying capacity of the vehicles.

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**Ministry of Transport as a Haulier**

The Government says it has often found existing methods wasteful, and that this arrangement will enable a more efficient system to be established. Recent events, moreover, have shown it is desirable to be able to switch transport from one place to another to meet sudden demands with a minimum of delay, and the new scheme aims to give effect to priorities, to promote flexibility, and to ensure expedition. The scheme has resulted from 16 months' experience of the emergency organisation set up for road transport on the outbreak of hostilities and of the operation of the Meat Transport Pool. The emergency organisation will continue and will be superseded only in part by the new scheme. As a first step arrangements will be made by the Ministry of Transport with other Government Departments (such as the Ministries of Food and Supply) for carrying regular blocks of Government traffic. Expansion thereafter will depend upon the measure of its success though, whether it expands or not, the Ministry will enter the field of commercial haulage to a certain extent, in order to make full use of the carrying capacity of the hired vehicles. In so doing, the Ministry of Transport states that it does not intend to compete unfairly with the commercial haulier nor to prejudice the post-war position of the goods carrying industry.

\* \* \*

**Road Transport and Railways in War**

In announcing the scheme outlined in the previous notes, the Minister of Transport took the opportunity to correct some impressions that have gained wide currency about the objects heretofore underlying the control of road transport during the war. The main difficulty of making a war plan for goods transport by road was due to the fact that there were nearly half-a-million vehicles in the hands of 220,000 operators, and a further problem was presented by the Government intimation to the Ministry of Transport that petrol would be rationed shortly after the outbreak of war. This rationing, states the Minister, was not due to any desire on the part of the Ministry to cripple road transport for the benefit of the railways, as some persons have suggested, but resulted from a very elaborate survey by the Committee of Imperial Defence of the demands of the fighting services and civil transport, and our general facilities (including shipping) for importing petrol and fuel oil from abroad in wartime. The problem was to ensure that essential demands for transport were met, and at the same time that the prescribed economy in fuel was attained. The Ministry of Transport has stated that it always regarded the second objective as subservient to the first, and in fact it never entirely achieved the economy asked of it. As is well known, a basic ration designed to enable every vehicle to travel approximately the same distance every week was allotted to all. Supplementary rations were refused in cases where the work for which they were asked was deemed unnecessary or could be performed without excessive inconvenience or cost

by alternative means of transport, and a substantial amount of traffic was thus inevitably diverted from the roads to the railways. There seems to be no change in the fuel situation which would justify a reversal of this broad policy, and in fact one of the objects of the new road transport scheme of the Government is to secure better loadings of road vehicles on war work, with resultant economy in fuel.

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### Pennsylvania Dividends Flown to Great Britain

To ensure that its stockholders in Great Britain received the 2 per cent. dividend, payable on December 18 last, simultaneously with stockholders in the U.S.A. and elsewhere, the Pennsylvania Railroad Company sent the dividend cheques by Clipper transatlantic aircraft for the first time. The British warrants were payable in sterling to 1,201 stockholders in England, Scotland, and Wales, owning 123,569 shares. The drafts, drawn on the Midland Bank in London which for many years past has handled the Pennsylvania Railroad dividend disbursements in Great Britain, left the U.S.A. on December 3 by plane to Lisbon *en route* to London. On account of Federal restrictions against sending money into territories recently occupied by Germany, some foreign holders are prevented from receiving their dividends. All non-American subjects have the amounts remitted to them reduced by the "withholding taxes" levied by the U.S.A. Government. Altogether 284 stockholders, upon whose shares the dividend totals \$8,536, are understood to be in countries recognised as being subjugated to Germany, namely, Belgium, Denmark, France, Holland, Luxembourg, Monaco, Norway, and Roumania.

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### New South Wales Railway Safety

A paper read recently by Mr. A. G. Dennis at a meeting of the Sydney Centre of the Institute of Transport, gave a comprehensive description of all the measures taken on the N.S.W. Government Railways for the prevention of accidents. That these measures have proved progressively more effective, is shown by the following statistics:—

20-year Period	Passengers Carried	Passenger Fatalities	
		Actual	One in
1879—1899	303,000,000	35	8,657,143
1899—1918	1,000,000,000	25	40,000,000
1919—1938	2,800,000,000	37	75,675,675

The last figures are the more remarkable because 27 out of the 37 lives were lost in one accident, the worst in the history of the Government Railways, which occurred in 1926 due to the failure of the human element. Since that year not one passenger has been killed in a major train accident. In the 13 years 1927-39 over 2,000,000,000 passengers were carried, and upwards of 216,000,000 passenger train-miles were run, without a passenger fatality, which, the author claimed, was a world record. In conclusion he outlined the training provided for the railway employees in accident prevention, and acknowledged the valuable services of the N.S.W.R. Institute to this end. Credit is, however, also due to the administration of the system for its untiring efforts to leave untried no safety device, equipment, or method of working, and for constantly keeping abreast of the times in the adoption of all suitable safety-first measures.

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### Midland Railway of Western Australia

The most important privately-owned railway now existing in Australia is that belonging to the Midland Railway Co. of Western Australia Ltd., which connects the Northern system of the Western Australian Government Railways with Perth and with the Eastern Goldfields Railway of the State. The concession from the Government includes a land grant. A most important and fertile part of the State is served by the railway, which has a length of 277 miles on the 3 ft. 6 in. gauge, running from Midland Junction near Perth, to Geraldton. It was opened for traffic in 1894, but no dividend was paid on the unified ordinary stock until the 2½ per cent. distributed in respect of the year ended June 30, 1927, followed by dividends for each of the next three financial years. Thereafter no dividends have been paid except the 2½ per

cent. for the year ended June 30, 1938. The report for the year to June 30 last shows gross traffic receipts of £155,899, a decrease of £18,523 in comparison with the year 1938-39. This was due principally to reduced transport of wheat, owing to restriction in shipping facilities caused by the war. Working expenses were £82,568, against £82,821, representing 52.96 per cent. of the gross receipts, compared with 47.48 per cent. Net receipts of £73,331 showed a decrease of £18,270. Sums of £30,000 and £1,000 have been transferred to depreciation and renewals account and to taxation reserve account, respectively, and the interest on the 5 per cent. second mortgage cumulative income debenture stock is fully covered, leaving £44,087 to be carried forward.

\* \* \*

### The American National Park Tourist Route

A notable modern railway construction work in Northern California and Oregon is described in our pages this week. The line, which is 200 miles long, forms an important link between San Francisco, the States of Oregon and Washington, and Western Canada. It is also notable as the final link in a chain of lines which has greatly stimulated tourist traffic in the area west of the Rocky Mountains, by reason of the fact that this chain links up the following national parks: Yellowstone, Glacier, Rainier, Crater Lake, Lassen Volcanic—which is on the new line—Yosemite, Mesa Verde, Grand Canyon, and Rocky Mountain National. The 200-mile construction between Klamath Falls, on the Great Northern system, and Keddie, on the Western Pacific main line, was the largest work of the kind undertaken in the West for more than 20 years previously, and was remarkable in that practically all the extensive engineering work was undertaken by power plant without the use of the usual contractor's railway equipment. The valuable forests opened up by the new line contain 36 billion feet (board measure) of standing timber, and the line taps 400,000 acres of agricultural land, but its importance lies mainly as a north-and-south through route parallel to the Pacific coast but near the Rockies.

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### A Direct Conflict of Evidence

Colonel Trench has unfortunately been unable to arrive at a precise conclusion about the collision which occurred at Gretna Junction, L.M.S.R., on November 5, 1940. The 10.5 a.m. express, Euston to Perth, which was running late and had clear signals, struck the tender and wagons of a goods train which, almost brought to a stand, was across the junction from the up branch—the old G. & S.W.—line. This is a main route, of course, but we term it branch here for convenience. The driver of the goods train declared the inner distant and outer home were off, and was supported as regards the former by his fireman and guard, but said the inner home was on, and that his best efforts did not enable him to stop clear of the fouling point. This meant that the signalman must have changed the road, which he emphatically denied having done. There was thus a direct conflict of evidence. Weighing the possibilities, Colonel Trench, whose report on the case is summarised at page 129, considers the greater probability to be that he must have done so. All the men concerned were experienced and had good records.

\* \* \*

### The Trans-Zambesia Railway

Mr. V. L. Oury was able to give some interesting pointers as to possible future developments in the area served by the Trans-Zambesia Railway Co. Ltd. when he presided at the annual general meeting held in London on December 19. During the war it is impossible to see far into the future in Portuguese Mozambique and British Nyasaland. Both these territories, however, have ample railway transport facilities to the port of Beira, capable of handling a very large increase of tonnage. It is satisfactory to note that, despite difficulties created by the war, both the Portuguese and the company are looking ahead and laying the founda-

tions necessary to enable developments of this kind to proceed. Mr. Oury stated that Portugal has made it clear that she intends to develop the resources of her overseas possessions. The British Government, in passing the Colonial Development & Welfare Act during the summer, provided that during each of the next 10 years financial assistance up to a maximum of £5,000,000 may be given to colonies, and this too should assist in furthering the business of the railway. Recent investigations by the Anglo-American Corporation of South Africa have indicated that conditions in Nyasaland are favourable for the establishment of an important aluminium industry; it has been ascertained that there is a commercial deposit of upwards of 60,000,000 tons of bauxite. The significance of this possibility for the future of Nyasaland and for that of the railway is considerable. Even if present conditions prevent immediate decision as to its feasibility, the possibility of a favourable development of this kind some years hence cannot but have favourable repercussions on the working of the line.

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### Steam Haulage of Electric Coaching Stock

In this country cases of emergency occasionally arise in which silver frost coats conductor rails with ice so rapidly that electric trains are immobilised and the only means of maintaining the flow of traffic is for these trains to be hauled by steam locomotives. A correspondent in Victoria, however, calls our attention to the fact that shortage of non-electric stock in that State necessitated the running of seven-car multiple-unit electric sets hauled by "A2" class 4-6-0 steam locomotives during the Eucharistic Festival last November. The special working involved in connection with this festival in 1939 was described in our issue of June 30, 1939. Owing to the extra Sunday excursions recently introduced to cater for visitors to the various military camps, and to the fact that a considerable quantity of excursion stock had to be kept ready at country stations for military traffic, the railway administration found itself with only six steam coaching sets available for Eucharistic festival excursion trains. The only alternative was to run steam-hauled electrics, and in practice it was found that although the resistance of the electric equipment in the three motor coaches in each seven-coach set made starting slower than with non-electric stock, the running thereafter was comparatively easy, and in the up direction, with mainly favourable gradients, the steam-hauled electric trains made practically the same running time as the normal excursions after allowing for slower acceleration. Our correspondent ends by remarking that the successful result of the experiment may also prove significant in view of future national requirements.

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### A Standard of Brightness

Readers may have noticed with admiration a recent item in our pages recording a simple portable device for measuring and comparing degrees of brightness. If this is applicable to human beings as well as inanimate objects, one of the major problems of social life will have been solved. There are many good people whose keenest desire in life is to be considered bright. We know a man whose speciality is making jokes about railways. There are few situations in ordinary life for which he cannot find a parallel in railway operation, and a parallel considered immensely diverting by the large and uncritical audience he has had the good fortune to amass. His witticisms are frequently retailed to us, who have the honour to be considered a standard of brightness in these matters, and when we fail to explode, the narrator, in an agony of self-abasement, cries, "of course I can't tell it like *he* does; I'm not *half* so bright." What he really means is that *we* are very dull, and when conscientious reflection on the subtlety of the jest still leaves us unsmiling, we begin to wonder whether he is not right. Lacking at present a portable standard of brightness to reassure ourselves and others on this point, we resign ourselves to the unhonoured obscurity of those who neither look bright nor feel bright, but simply have to be bright to earn a living.

### This Year's Railway Meetings

THE Big Five banks have made a striking and commendable innovation in the conduct of their general meetings this year and have provided an example which might well be followed by other large corporations. The speeches delivered by the Chairmen of the banks have for long attained an important place in City public pronouncements and their shareholders have come to expect a broad and comprehensive review of commerce and finance on the occasion of the annual meeting. This year each of the banks has sent to shareholders, with the annual report and accounts, a copy of a statement by the Chairman, and has published it, either in full or in summary, in the press on the day on which the shareholders are expected to receive their copy. The annual meetings, of course, must still be held in order to comply with the Companies Act provisions, but there will be no further general statement by the Chairmen and only formal business will be transacted. The banks decided on these steps because of the undesirability in present circumstances of large congregations of persons, of difficulties in travel, and a desire to place as little strain as possible on transport agencies which are already overburdened, and of inconvenience to their shareholders—many of whom are engaged on national work—in making their way to the City. These points are all praiseworthy and the question is raised as to whether a similar course will be adopted by the four main-line railway companies, whose annual meetings rival those of the banks in the attention the speeches arouse and exceed them in the number of stockholders attracted.

There are certain points of difference between the railway companies and the banks in a matter of this kind. First, of course, is the considerable difference in the number of proprietors who would have to receive copies of the statement. In all there are some 852,000 railway stockholders, of which 323,000 are on the registers of one company—the London Midland & Scottish. The largest of the banks, the Midland, has but some 80,000. Moreover, it has always been the practice of the banks to send to every shareholder a reprint of the Chairman's speech, whereas this is not generally supplied to railway stockholders. The present procedure has enabled the banks to effect some economy, for whereas in past years it has been the custom to send each shareholder first a copy of the report and accounts, then a reprint of the speech, and finally a dividend warrant, on this occasion the statement by the Chairman accompanies the report and accounts and one bill for postage is eliminated. In the last three years, too, the banks have made considerable economies in the paper and printing needed for the annual report. In the case of the Midland, that document has shrunk successively from 40 pages to 32 and now to 12. Last year the annual reports of the railway companies were but a shadow of their former selves, because of the elimination, by Government order, of much of the pre-war statistical matter. On the other hand it was the general practice of the railways to send stockholders only a summary of the full report; the latter was obtainable on application.

To a certain extent the procedure the banks have now adopted was introduced a good many years ago by a railway company. Mr. William Whitelaw, when he was Chairman of the London & North Eastern Railway Company, introduced the principle of enclosing with the report and accounts a review of the company's business during the period covered by the accounts and this practice has been adopted by Sir Ronald Matthews. In the case of the L.N.E.R., however, there has also been a Chairman's speech at the annual meeting, although generally that statement has been shorter than those at the meetings of the other railway companies. From the viewpoint of the railway companies there is little doubt that adoption of the lead given by the banks would commend itself, for the companies have an especial interest in present circumstances in doing nothing which would result in increased travel. Some economy in the time—often several hours—taken by each annual meeting should also be a consideration, for at present the members of the boards, all men of wide responsibilities, and certain high railway officers, are immobilised for at least half a day. The majority of stockholders, and especially the more responsible elements, would welcome the innovation. There is little doubt that the



meetings are attended in large measure by the smaller stockholders and by a section which likes to voice its opinions. The number of man-hours which are wasted as the result of the orations of some of these persons at railway meetings every year is a striking commentary on their advocacy of the reforms they are wont to urge. Presumably, however, they would still have their opportunity for discussion even if the Chairman's speech had been eliminated from the oral proceedings. On the whole there seems much to commend and little against a more general adoption of the precedent set by the banks. The circulation of a copy of the Chairman's speech with the report and accounts has been the practice of some of the overseas railways this year, and the London Passenger Transport Board, which is not required to hold an annual meeting, issues a report which, even in the smaller size in which it made its appearance last year, covers all the main features of the year's events. There is little doubt, too, that, had the war at the outset developed on the lines then expected, with intensive air bombardment, the practice of holding annual meetings would have had to be modified considerably.

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### British Trade Mission to South America

THE British trade mission to South America arrived in Buenos Aires from Brazil on December 1, and left for Uruguay on December 14, after spending a very busy fortnight in Argentina. The members of the mission were enthusiastically welcomed on their arrival and lavishly entertained by the Argentine Government and the Anglo-Argentine community. A particularly gratifying feature of the visit was the appreciative references made to it by the Argentine press, which was unusually laudatory in its comments and devoted a large amount of space to reporting the social and other activities of the mission. The day after their arrival the members of the mission were entertained by the Argentine Government to a luncheon at Government House, a brilliant function attended by the British Ambassador, high public functionaries, and the leading members of the Argentine and British communities. The Vice-President of the Nation, Dr. Ramon S. Castillo, presided, and eloquent speeches were made by the Minister of Foreign Affairs, Dr. Julio A. Roca, and the Head of the Mission, the Marquess of Willingdon. Two days later the members of the mission were the guests of the British Chamber of Commerce at a luncheon given at the Plaza Hotel, Buenos Aires, at which several hundred persons, including several cabinet ministers and representatives of every branch of trade and finance, were present. The speakers were the British Ambassador, Sir Esmond Ovey, who occupied the chair in his capacity as Honorary President of the Chamber, the Minister of Finance, Dr. Federico Pinedo, Sir Granville Gibson, M.P., and Lord Willingdon. On the next day the members of the mission were entertained by the Argentine Chamber of Commerce at another luncheon at the Jockey Club, Buenos Aires, under the chairmanship of the President of the Chamber, Dr. Tomas Amadeo. On this occasion the principal speaker was the Secretary of the mission, Mr. S. G. Irving, who referred to the purpose of the mission, which was to see what it was possible to do to assist trade between Argentina and Great Britain in the circumstances of the war, pointing out that the best way to attain this end was to achieve victory quickly. This would mean for Argentina not only the survival of her best market but the speedy restoration of her purchasing power for peacetime imports.

On December 9, the mission left on a short visit to Rosario, where the members were cordially welcomed by the municipal authorities, and entertained to luncheon by the British Chamber of Commerce; the function was attended by the Provincial Governor, the Lord Mayor, and other high public officials, the British and Allied Consuls, and a representative gathering of business and professional men. In the afternoon the members of the mission visited the Chamber of Commerce and the Grain Exchange, where they met representatives of the Federation of Commerce & Industry, the Grain Brokers' Association, the Exporters' Association, and the Shipping Agents' Association, with whom discussions on the local trade situation took place. The same evening the

mission left for Cordoba, where they were the recipients of another cordial welcome from the Provincial Government and municipal authorities, by whom they were entertained, and were afterwards the guests of the British community at a luncheon at the Bristol Hotel. In the afternoon the visitors made a motor tour through the hills, and subsequently attended a garden party at the Villa Allende Golf Club. While in Cordoba, some of the members, including the naval representative, Admiral Sir Cyril Fuller, accompanied by the British Air Attaché to H.M. Embassy, Group Captain A. J. Miley, paid a visit to the Government aircraft factory there. The mission returned to Buenos Aires the same evening, again travelling, as on the outward journey, by the Central Argentine Railway. The last two days in Buenos Aires were occupied mainly by visits of diplomatic courtesy and social functions organised by the Anglo-Argentine community in honour of the visitors, who, as stated above, left for Montevideo by river steamer on the evening of December 14.

Of the practical outcome of the visit of the mission to Argentina it is as yet too early to speak. The results of such contacts are as a rule visible only some considerable time after they have been made, and this is particularly the case in the present instance, where the purpose of the mission was concerned mainly with post-war problems, and any attempt at long-view planning would probably be doomed to eventual disappointment if not complete frustration. In a message to the press after his arrival, Lord Willingdon made it clear that the mission had no authority to enter into or sign a trade pact or treaty of any kind, its object being to study and investigate means for smoothing out whatever economic and financial difficulties the South American republics were suffering as the result of the war. During their stay some of the members of the mission had interviews with members of the Government, including the Ministers of Finance and Agriculture, and a special committee composed of financial experts, at which it is understood the whole field of trade and financial interchange between Argentina and Great Britain was reviewed, with special reference to exchange questions and that of Argentina's considerable balance of blocked sterling in Great Britain. The normal commercial relations between Argentina and Great Britain have been seriously upset by the European conflict. The former has been left with enormous unsold surpluses of maize on her hands, for which there are no available markets, to the detriment of the British-owned railways which are passing through the most critical period in their history, due to the decline in their receipts, which have dropped to disastrously low levels. The British blockade is a factor which has regrettably but inevitably contributed towards this state of affairs. The visit of the mission to Argentina has afforded its members the opportunity to explain personally and in detail the circumstances which have inexorably imposed this policy upon Great Britain. Such friendly discussions are an invaluable medium for clearing up misunderstandings, and have enabled the trade difficulties created between the two nations by the war to be studied and examined in all their aspects, with a view to arriving at a practical solution to the various problems mutually advantageous to all the parties concerned.

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### Victorian Government Railways

THE report of the Victorian Government Railways for the financial year ended June 30, 1940, shows an improvement in gross receipts, accompanied by a slight decrease in working expenses, despite the prolonged coal strike in New South Wales, which imperilled supplies of fuel and made it necessary to restrict services. The financial result of working the railways, tramways, and road services, after debiting interest charges, was a deficit of £396,201, compared with the deficit of £952,066 in the previous year. The improvement was mainly in revenue, which was £582,120 higher than in 1938-39. Railway gross revenue was better by £578,126, or 6.22 per cent., and railway working expenses were slightly less, by £1,319. Passenger revenue increased by £177,210 (4.6 per cent.) of which country traffic contributed £134,452 (8.7 per cent.) and suburban traffic £42,758



(1.8 per cent. This improvement was assisted by military movements. Goods revenue increased by £427,663, but that from livestock traffic fell by £66,748. Both these variations are ascribed to the effect of drought conditions in 1938-39, when wheat tonnage was only about one-half of normal and livestock was maintained through enforced transfers. In 1939-40 revenue from wheat increased by approximately £224,000 and that from wool by £40,000. Improved economic conditions, reflecting in part the recovery from the drought, resulted in an increase of £130,000 in the revenue from higher grade traffic. The increase in revenue under all these heads would have been greater but for the restrictions on train services during the coal strike in March, April and May. The revenue per traffic train mile was 11s. 7-16d., or 1s. 2-62d. greater than that of the preceding year. The principal figures relating to railway working are compared with those of the previous year in the following table:—

	1938-39	1939-40
Miles open ... ..	4,759	4,759
Train miles ... ..	17,889,634	17,007,970
Passenger journeys ... ..	142,123,567	144,649,075
Goods and livestock, tons ... ..	5,975,853	6,186,989
Operating ratio, per cent. ... ..	86.82	81.72
Passenger revenue ... ..	3,854,681	4,031,891
Goods and livestock revenue ... ..	4,275,947	4,636,862
Total earnings ... ..	9,283,465	9,861,592
Working expenses ... ..	8,059,727	8,058,409
Net earnings ... ..	1,223,738	1,803,183
Capital expenditure ... ..	51,518,342	51,135,416

Road transport continued to carry a large volume of business, both in passengers and goods, over routes which are well served by the railway. The position created by road competition, for goods especially, is serious, and the report

emphasises that satisfactory financial results cannot be expected from railway operation without adequate protection from road competition. Road operations are stated to be permitted much greater freedom than in any other State of the Commonwealth. Under working expenses, Arbitration Court and other industrial awards, accounted for increases amounting approximately to £135,000, while a further increase of £45,000 was due to the higher price of coal. The construction of fifteen "K" Class locomotives was begun, and five all-steel cars were constructed, adopting the design of the units of the Spirit of Progress. For the transport of wheat in bulk 285 open wagons were built. Under the heading of Level Crossings, reference is made to the proposal that the cost of providing warning signals should be shared by the County Roads Board and municipal authorities, and, although agreement was not secured in this respect, a sum of £5,000 was allocated from the Federal Aid Roads & Works Grant towards that object. Further flashing light signals were installed, making a total of 46 crossings so protected. The statutory minimum contribution of £200,000 was again appropriated for the Renewals & Replacements Fund. Credits for depreciation made the total payment £297,479, but this is less than one-half the amount necessary to meet the actual wear and tear. The report stresses the urgent need for making regular provision for a largely increased works programme, including the construction of rolling stock and locomotives, as well as relaying track, renewal of bridges, etc. The experience in other countries since the outbreak of war has demonstrated conclusively the vital necessity for well-equipped railways capable of handling emergency traffic on a large scale.

## THE SCRAP HEAP

A correspondent reports that there was a good fire in his station waiting room the other morning until an absent-minded porter rushed in and threw sand on it.—*From "Punch."*

A string of onions has realised £26 for Preston's free buffet for members of the Services at Preston railway station. The onions, given by Mr. R. Whittle, of New Longton, were raffled among members of the Penwortham charity committee at 2d. a time. The winner was a Farrington engine driver.—*From the "Daily Mirror."*

Mr. C. Yoshi, a British Columbia resident of Japanese origin, recently showed his loyalty to his adopted country by giving his Canadian Pacific Railway pension cheque for November to the company's employees' golden bomber fund which has as its objective buying a modern \$100,000 bombing plane for the Royal Canadian Air Force.

A correspondent suggests that the Southern Railway has much to answer for in regard to the Italian debacle. He says that when one contemplates the number of Italian railway vehicles now detained on the Southern, one wonders that Dr. Gayda has not devoted a leading article thereto before this, especially as excuses are so very scarce at the present time. Obviously his sources of information must be meagre.

The first through train in the States from the Atlantic to the Pacific coast was an excursion, run over the newly-opened Union Pacific and Central

Pacific Railroads, from Boston to San Francisco in May, 1870; the journey took eight days. The fastest coast to coast journey ever made was by the diesel streamline City of Portland train, owned by the Union Pacific Railroad, which made an experimental run from Los Angeles to New York 3,248 miles, in 56 hr. 55 min., including stops, in October, 1934.

### MRS. PENNY'S POUNDS

We are advised by Mr. F. H. Wherly, stationmaster, Liskeard, of a recent occurrence which reflects credit alike on the honesty and efficiency of the company's staff. One morning, some weeks ago, a lady passenger alighted at Liskeard from London and informed a member of the staff that she had left a brown attache case on No. 1 platform at Paddington the night before. "It contained," she said, "a cash box, bank books, and my husband's medals." The stationmaster at once telegraphed Paddington as follows: "Small brown attache case containing

cash box, bank books, etc., name Penny, left outside cloakroom No. 1 platform 9.50 p.m. yesterday. Send here."

By afternoon a reply had been received from Paddington L.P.O. "Penny's case hence to you 9.50 p.m. £181 1s. 2d. paid in your credit through cash account today." Mrs. Penny, who had proceeded to her destination, the village of Seaton, Cornwall, was at once advised of the recovery of her cash and other property, and it was not long before arrangements were made to restore it to her.—*From the "G.W.R. Magazine."*



**Courting Luck**—A soldier returning to his unit makes friends with a black cat at a London station

## OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

### EIRE

#### Heavy Sugar Beet Traffic

The four sugar factories in Eire, situated at Carlow, Mallow, Thurles, and Tuam, have, during the past season, worked for a much longer period than in any previous year, and the tonnage of beetroot conveyed by railway shows a substantial increase. This is due to the increased quantity of beet grown throughout the country, making it unnecessary to import any large quantity of sugar. In fact, it is hoped that next year the factories will produce all the sugar required in Eire.

In the past season nearly 400,000 tons of beet were conveyed by rail, as well as a considerable quantity sent direct from farms to factories by road in the G.S.R. company's lorries, a large fleet of which was also used to convey the traffic from the farms to the railheads. There was also direct haulage by opposition carriers. To convey this traffic by railway upwards of 2,000 wagons a day were provided at peak periods, or approximately 30 trains in each direction daily. Despite the fact that unloading continued at factories throughout the 24 hours daily, the running of empty trains to distant places necessitated two, or in some cases three, sets of wagons. The traffic begins in October when the beet has been harvested, and continues during November and December, in some cases running on into the early part of January.

In addition to the beetroot which is conveyed in open trucks, the manufactured sugar throughout and subsequent to the manufacturing season has also to be conveyed, as well as pulp in covered wagons. The pulp is used as cattle food and provides a ready substitute for imported feeding stuffs, which in present circumstances are not available in the same quantities as previously.

### INDIA

#### Closing of Branch Lines

After due notice, the East Indian Railway authorities have closed down two short branch lines in the Lucknow Division, namely the Dalmau-Daryapur and the Akbarpur-Tanda lines. This measure is in accordance with the recent policy of the Government to close lines which are unprofitable or which offer less facility to the public than road services. Of more importance, however, is the decision of the same railway to close the section of the Gajroula-Muazzampur Narain chord line between Chandpore and Bijnore as from December 1. This matter was recently the subject of an adjournment motion in the Central Legislature. The mover, Sir Raza Ali, supported by several others, emphasised that the closing of this railway would cause great public

inconvenience. It was, further, submitted that very inadequate notice of this step was given. Sir Andrew Clow stated that apart from questions of traffic and revenue, there were other factors which the Government had taken into consideration, such as adequacy of alternative facilities of transport. In this case, he maintained that alternative means of transport would be found adequate. He agreed that there was some point in Sir Raza Ali's complaint about the short notice given, but in this particular case there were special reasons of urgency in that the materials released would be used for war purposes. The House rejected the adjournment motion.

#### Baroda Railways

The Baroda State, though small in area, ranks among the foremost of the numerous states under the governance of Indian princes. In relation to its size and population, it possesses the largest railway mileage in India. In view of the importance of rail and road communications in the economic progress of a country, the Baroda Government has pursued a policy of connecting as many villages as possible with the railway system. A planned programme for the construction of 114 feeder roads was adopted some time ago, and at the close of the last financial year 289 miles of roadway were completed. Further extension has recently been sanctioned. Landowners are compensated for the loss of land required for roads, the Government paying a third of such compensation and local authorities bearing the remaining two-thirds.

### CEYLON

#### Committee of Inquiry into Railway Finances

The question of the cadre of the railway service, the expenditure on the railway, and the problem of the competition offered by road transport are being considered by a select committee of the State Council, appointed to consider the recommendations of the Retrenchment Commission. The select committee at its last meeting appointed a sub-committee to report on the Railway Department.

In dealing with the subject of the railway cadre, it is pointed out that in 1913-14 the railway earned Rs. 16,500,000 and spent Rs. 4,000,000 on emoluments. In 1928-29 it earned Rs. 32,500,000 and spent Rs. 12,750,000 on emoluments. In 1939-40 it earned Rs. 16,500,000 as in 1913-14, but spent Rs. 10,750,000, or  $2\frac{1}{2}$  times as much as in 1913-14, on emoluments.

The committee considers that the recommendations of the Hammond Commission have not been carried out to a satisfactory extent. The case of the Uda-Pussellawa line is pointed out in this connection. Although it has been closed to passenger traffic, it is

still being maintained for carrying goods.

#### Road Competition or Monopoly

On the question of road competition, the committee feels that, if the railway is to remain national property, undue competition should be eliminated, and raises the point as to whether all road transport for hire should also be State-owned.

#### Bid for Punctuality

A special effort to make trains run more punctually is being made by the railway authorities, and the results are already reflected in an appreciable improvement in this direction. The new policy has resulted in 85 per cent. of the trains being run to time. Inquiries into train delays are now held promptly and even a two-minute delay to a train at a station is investigated by the head office in Colombo. District Traffic Superintendents have been specially instructed to pay particular attention to train delays and to inquire and report on the spot, and in the case of trains which are habitually subject to delay, to travel in them and trace the cause of the delay and expedite the working. At the present time, some unavoidable delay is caused by the substitution of wood fuel for coal on the engines with the consequent need for more frequent fuelling.

### SWEDEN

#### State Railways' Financial Results, January-September, 1940

The State Railways' financial results for the first nine months of 1940 are very satisfactory as compared with those obtained during the same period of 1939. Details are as follow:—

	January-September ...	1939	1940	Increase per cent.
Receipts	...	200.5	256.1	27.8
Expenditure including contributions to Renewals Fund	...	153.2	184.2	20.75
Working profit	...	47.3	71.9	52.0
Contribution to service of State debt	...	24.6	25.5	—
Surplus after making the foregoing contribution	...	22.7	46.4	104.5

These results refer to the working of the whole State Railway system including the Luleå-Riksgränsen line.

The comparison of the results obtained in the two periods under review is influenced considerably by the incorporation in the State Railways system of a number of private railways as from July 1 last, and by the increase of goods rates and passenger fares in force from the same date.

#### New Aerial Cableway

An aerial cableway now in course of construction in central Sweden is said to be the largest of its kind in the world, or at least in Europe. Its full length when completed is to be 42 km. (26 miles), and it is designed to carry as much as 700,000 tons of stone a year from the quarries to recently-constructed cement works. The stone will be conveyed in 550 high-capacity hopper buckets, and loading, transport, and discharge will all be by gravity, and practically automatic, with a minimum of manual labour.

### AXLE STRESSES—III\*

#### *A study of the bending moments in carrying and driving axles of locomotives and rolling stock*

By GEORGE W. McARD

##### Locomotive Crank Axles

(a) *For Two-Cylinder Locomotives.*—Fig. 8 shows the method of determining the bending moments in this type of axle and, as in most other driving axles, the loads, and therefore stresses, vary according as the driving cranks traverse their rotary path. The position shown in the small diagram on the above figure is considered to provide the most severe stressing which this axle can normally receive—apart from the shock loading arising from rail conditions—and the method of calculating the various bending moments is clearly shown on this figure. The torsion is rather different from the two cases previously considered, and the following notes should be of assistance; when determined, the TM and BM, are combined as previously shown and the stress  $f$  ascertained.

The total torque developed by each crank  $= 0.707PR$  and the torque transmitted along the axle will vary throughout its length, part of that generated by the right cylinder passing to the right wheel and the remainder going through the axle to build up the torque of the L.H. cylinder crank. The whole of this then passes, part to the L.H. wheel, and the bulk, by way of the L.H. coupling rod, to drive the remaining coupled wheels. The following are the values:—

- (1) Torque between R.H. crank and R.H. wheel  $= 0.707PR/0.5N$
- (2) " " R.H. " L.H. crank  $= 0.707PR-(0.707PR/0.5N)$
- (3) " " L.H. " L.H. wheel  $= 0.707PR + \{0.707PR-(0.707PR/0.5N)\}$   
 $= 1.414PR-(0.707PR/0.5N)$ .

But if  $1.414PR$  represents the total torque developed and  $(1.414PR/0.5N)$  that absorbed in this axle, the remainder will be the amount transmitted to the other coupled axles, and this value, divided by  $0.707R_1$ , will give the load  $p$  in the L.H. coupling rod.

$$p = \{1.414PR - (2.828PR/N)\} / 0.707R_1$$

The calculation of the stress in the webs is rarely necessary as these are usually so generously proportioned as to give a low stress value. An approximate method of calculating this stress, however, may be as follows, the amount arrived at being trebled on account of the "shock" character of the loading. Let  $W$ ,  $R_w$ , and  $S$  represent respectively the load at the rail on one wheel (in tons), the wheel radius and cylinder stroke (both in inches); also  $Z$  the modulus of section taken across the section of the crank web midway between axle and crankpin centres, with the web thickness as the section depth value. Then  $f$  will be the resultant stress.

$$Zf = 0.3W_r(R_w + 0.25S)$$

$$\text{and } f = \{0.3W_r(R_w + 0.25S)\} / Z$$

(b) *For Three-Cylinder Locomotives—all driving through one axle.*—The loads which this axle sustains are extremely variable during the full revolution of the crank, and the writer found from a series of axles of this class which he examined that the most severe loadings seemed to occur after the centre crank had passed through the first 15 deg. of its rotation for each stroke of the centre piston. The following notes are therefore based on this finding. The

stresses will be found to be the result of several bending moments plus a torque that varies in amount as it traverses the length of the axle. The following statement covers all the bending moments involved, together with the

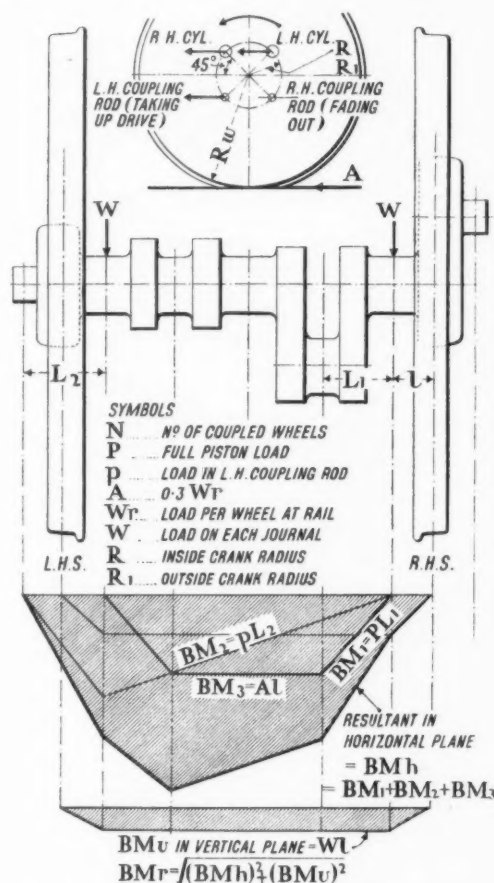


Fig. 8—Bending moment diagram of double-throw locomotive crank axle

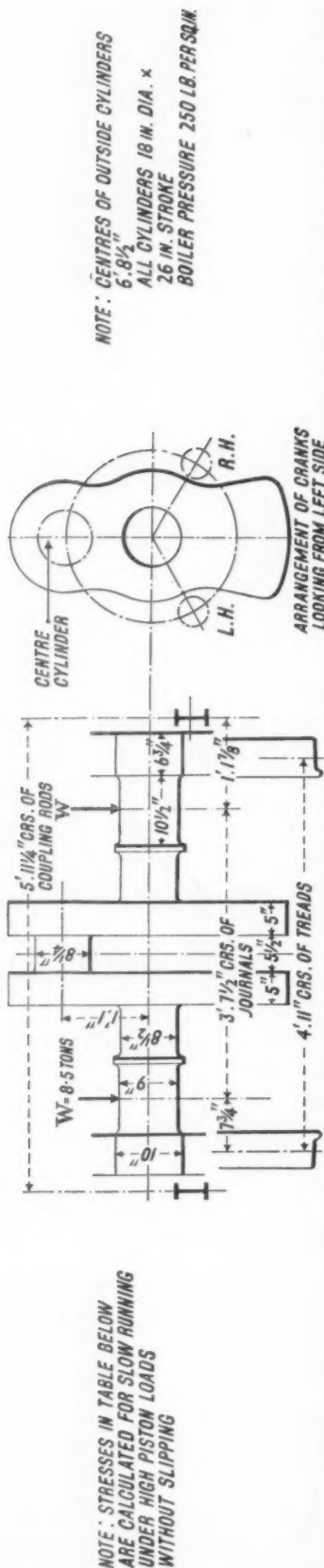
twisting moment, and indicates the method in each case of computing their respective values.

- (1)  $BM_1$ , due to the piston load on the centre crank, is simply that of a beam supported at two points and loaded at the centre. The maximum value is  $(PL_2)/4$  where  $P$  is the full steam pressure behind the piston, assuming full boiler pressure in the lb. per square inch.
- (2)  $BM_2$  is that resulting from the load on the R.H. crankpin and is equal to  $PL_1$ .
- (3)  $BM_3$  is the moment due to the load on the L.H. crankpin and equals  $PL_1$ , although  $P$  will become a diminishing value very soon.
- (4)  $BM_4$ , that due to the R.H. coupling rod, is naturally the product of the load transmitted to this rod  $p$  and the arm  $L$ .

In Fig. 9 two assumptions are made: first, that the cranks are pitched at 120 deg. from each other, and second,

\* The second instalment appeared in the October 18, 1940, issue





I	2	3	4	5	6	7	8	9	10	11	12	13	HORIZONTAL B. MOMENT IN AXLE				COMBINED LOADS				STRESS f								
													C.O. JOURNALS		CENTRE C. PIN		8" OFF ENG. C.L.		JOURNALS		CENTRE CYL.		8" OFF C.L.		JOURNALS		CR		
CRANK ANGLE	POSITION	CENTRE	RIGHT	LEFT	CENTRE	RIGHT	LEFT	TORQUE DEVELOPED	TORQUE PER AXLE	LOAD ON FRONT COUPLING RODS	AXLE TORQUE	R. HALF	L. HALF	R.H.	L.H.	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"	TONS"
1	1	28-4	28-4	23-5	-	320	245	585	195	10-0(C)	10-0(T)	-	-	139	139	309	309	66	66	154	154	316	316	2-45	2-45	5-02	5-02	3-91	3-91
2	2	28-4	28-4	18-2	96	357	168	621	207	5-77(C)	4-22(T)	32	64	80	59	319	319	66	66	213	199	326	326	1-69	1-69	5-18	5-18	2-89	2-89
3	3	28-4	28-4	7-4	185	369	48	602	201	1-00(C)	0-51(T)	88	97	14	7	313	308	66	66	179	185	320	320	1-42	1-42	5-08	5-08	3-44	3-44
4	4	28-4	28-4	-	262	357	-	619	206	4-18(C)	1-11(T)	155	107	58	15	287	201	66	66	266	195	295	295	1-55	1-55	4-68	4-68	3-42	3-42
5	5	28-4	24-6	28-4	320	277	-	597	199	10-75(T)	-	220	100	150	-	234	449	66	66	439	186	244	244	3-49	3-49	3-88	3-88	2-49	2-49
6	6	28-4	21-6	28-4	357	198	96	651	217	13-45(T)	4-87(T)	232	125	187	68	182	90	66	66	505	252	194	280	4-02	4-02	3-08	3-08	2-13	2-13
7	7	28-4	9-1	28-4	369	59	185	613	204	12-7(T)	12-7(T)	185	185	177	177	132	19	66	66	454	454	148	267	3-61	3-60	2-35	2-35	2-03	2-03
8	8	26-4	-	28-4	332	-	262	594	198	4-66(T)	12-9(T)	115	217	65	179	166	40	66	66	241	481	179	308	1-92	3-82	2-85	2-85	1-98	1-98
9	9	23-3	28-4	28-4	263	-	320	583	194	-	6-13(T)	97	166	-	85	212	103	66	66	183	306	222	330	1-45	2-43	3-53	3-53	2-51	2-51
10	10	18-2	28-4	28-4	167	96	357	620	207	0-79(T)	2-99(C)	101	66	11	42	213	151	66	66	188	181	223	343	1-49	1-43	3-55	3-55	2-61	2-61
11	11	7-6	28-4	28-4	5-0	185	369	604	201	4-65(T)	9-3(C)	71	21	65	129	115	120	66	66	210	292	133	274	1-67	2-32	2-11	2-11	1-45	1-45
12	12	-	28-4	28-4	-	262	357	619	206	7-83(T)	10-7(C)	31	31	109	150	20	120	66	66	259	331	69	197	2-05	2-63	1-09	1-09	1-51	1-51
13	13	28-4	28-4	24-6	-	320	277	597	199	10-2(T)	10-2(C)	-	-	142	142	309	444	66	66	157	157	316	316	1-25	1-25	5-02	5-02	2-41	2-41

NOTE: L.H. SECTION OF COLUMN 1 ABOVE REFERS TO CENTRE CRANK  
 ABBREVIATIONS: COLUMNS 10 AND 11 C AND T - COMPRESSION AND TENSION  
 IN DETERMINING VALUES FOR COLUMNS 2, 3 AND 4 ASSUME CUT-OFFS EQUAL 65%  
 COLUMNS 19 TO 22 RBM-RESULTANT BM, AND ETM - EQUIVALENT TM  
 NOTE: DIRECTION OF ROTATION THROUGHOUT AS FOR POSITION No 1

Fig. 10—Stresses in relation to crank angles for three-cylinder locomotive having proportions as shown in the sketch above the table

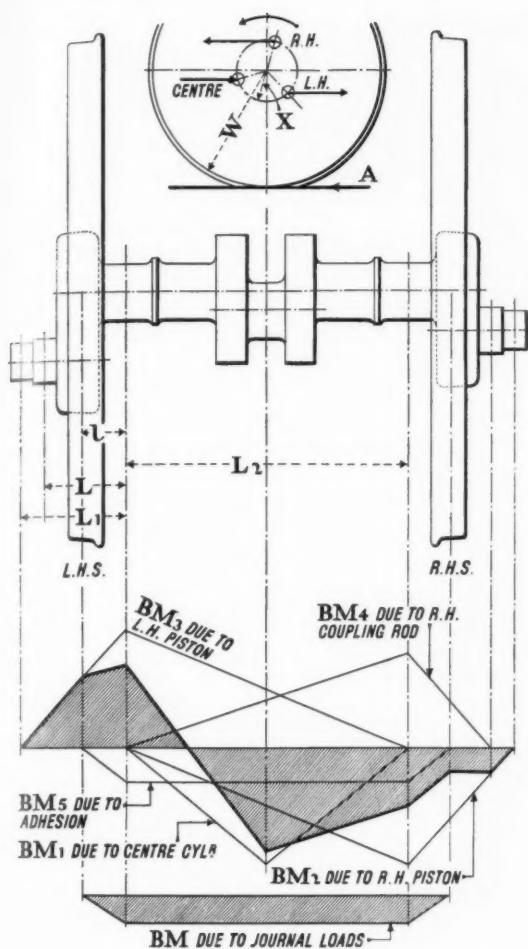
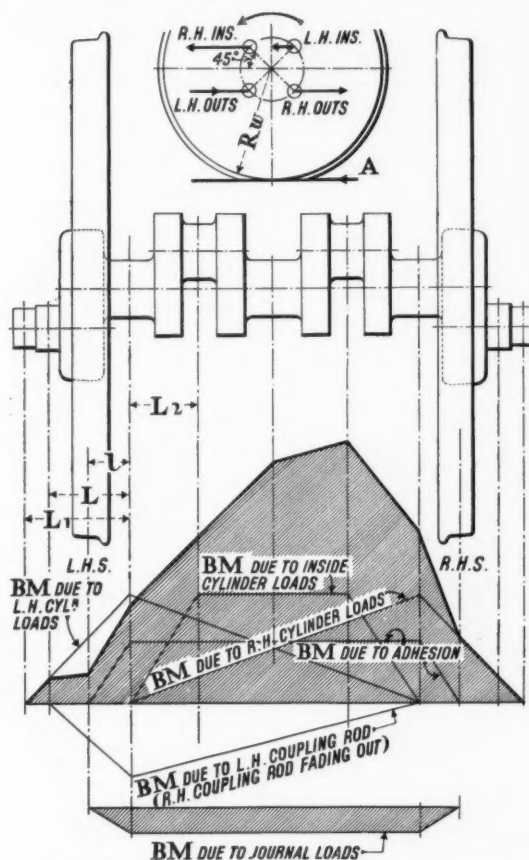


Fig. 9 (left)—Bending moment diagram of crank-axle for three-cylinder locomotive with all cylinders driving the same axle

Fig. 11 (below)—Bending moment diagram of driving axle of four-cylinder locomotive with all four cylinders driving the same axle



that the centre crank is 15 deg. below the front dead centre. The L.H. crank will therefore be at 45 deg. and the coupling rod will have practically ceased to function as a driving rod. This means, therefore, that the R.H. rod is taking the drive for the remaining coupled axles, and the torque in the axle necessary to transmit the load  $p$  through this rod will be  $pr (\sin \theta)$ . This will equal the tractive effort (TE) generated at the rail for these axles, or  $\{TE - (2TE/N)\}W$ , where  $N$  = the number of coupled wheels. Equating the two values we find

$$pr (\sin \theta) = \{TE - (2TE/N)\}W \text{ and}$$

$$p = \{TE - (2TE/N)\}W/r (\sin \theta)$$

- (5)  $BM_s$  is the BM caused by the force of adhesion and is simply  $Al$  where  $A$  is taken as  $0.3W_r$ , the load per wheel at the rail. This value for  $A$  is not strictly accurate in view of the method adopted for determining the load on the R.H. coupling rod, but the error is small and on the safe side.
- (6) The  $BM_v$  due to the journal loads, is taken in exactly the same manner as for previous axles.
- (7) The TM set up in the axle is a varying quantity and, relating the torque generated at the several cranks with the power absorbed by the driving axle, it will be found that the L.H. crank has a small excess which is passed along the axle to the R.H. wheel. All the power from the centre cylinder in this position of the cranks is transmitted through the axle to the R.H. wheel, thus giving a slightly higher torque between centre cranks and R.H. wheel, and a smaller amount from L.H. wheel to centre crank.

Torque on L.H. section of axle =  $Pr (\sin \theta) - W(TE/N)$  and to this must be added, for the R.H. section of the axle, the torque from the centre crank, or  $Pr (\sin \theta)$ . (Note that the value of  $\theta$  will be that for the particular crank under consideration).

Having determined the values of the component BMs, etc., find the resultant  $BM_h$  in the horizontal plane and combine with the vertical  $BM_v$ . Then obtain the equivalent  $TM_e$  by the formula already stated elsewhere and relate this to  $Z_f$ .

An alternative method of treatment for a three-cylinder locomotive is shown in Fig. 10, where the equivalent twisting moments,  $TM_e$ , and resultant bending moments,  $BM_r$ , are developed in tabular form, a cut-off of 65 per cent. being assumed for columns 2 to 4, and the steam pressures for the different crank positions being obtained from a theoretical indicator diagram for the locomotive under consideration.

(c) *For Four-Cylinder Locomotives, all driving through one axle.*—The loads and BM diagrams for a four-cylinder locomotive where all the cylinders drive through to the same axle are determined on similar lines to those for a three-cylinder engine, and the detailed description of the latter plus the data on Fig. 11 should provide all the assistance required in determining the stresses on the former. Generally speaking, the loads will be found most severe when the cranks are as shown in the figure (this condition also recurring when the wheel has rotated through half a revolution), and this can be tested mathematically by those who feel so disposed.

(To be continued)

## RAILWAY CONSTRUCTION IN NORTHERN CALIFORNIA

*On the Klamath Falls-Bieber-Keddzie line, which provides an important link between north and south in the Western U.S.A., virtually all the engineering work was done without the use of a contractor's railway*

AT the beginning of the last decade work was begun upon the construction of an important north-south connecting link between the Great Northern and the Western Pacific Railroads in Northern California. This link is 200 miles in length, of which the northern 88 miles from Klamath Falls, Oregon, to Bieber, Calif., were built by the Great Northern, and the southern 112 miles from Bieber to Keddzie were undertaken by the Western Pacific administration. Keddzie is on the W.P.R.R. main line and is situated

Explosives were extensively used to blast the formation out of the hillsides; on one occasion 50 tons of powder and 2 tons of dynamite were fired as a single blast to remove 115,000 cu. ft. of earth and rock. On embankments an 18-ft. formation width is provided, and in solid-rock cuttings the formation is 20 ft., or in loose rock 22 ft. wide, with  $1\frac{1}{2}$  to 1 side slopes in both cases.

### Horseshoe Loop

One of the most spectacular features of this part of the line is the Hollenbeck horseshoe curve in Wolf Creek canyon. It is 2,700 ft. long, but the width across the neck is only 400 ft., and it contains 240 deg. of curvature. As may be seen from the gradient profile reproduced, the ruling grades are 1 in 46 and 1 in 55. The permanent way consists of

Sketch map showing the position of the Klamath Falls-Keddzie section relative to the parent Great Northern and Western Pacific systems, and how it forms a link in the chain between Vancouver, Seattle and Portland in the north, and San Francisco

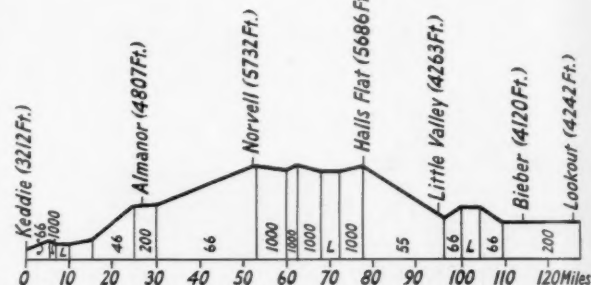


in the famous Feather River canyon, frequently referred to in the description of the rehabilitation of this main line in our issue of December 27, 1940.

The cost of the whole 200 miles was estimated to total some \$14,000,000 including the joint terminal at Bieber, and about \$10,000,000 of this sum was required for the W.P.R.R. 112-mile section of the construction.

### The Southern (Western Pacific) Section

On this section some 1,000 men were employed and much modern construction machinery was used, including power shovels, drag-line excavators, and caterpillar tractors for hauling 12-cu. yd. Ben Hur chariots and smaller trucks. Ten tunnels and eight viaducts and bridges of any size were involved, the largest of the latter being over Clear creek, 225 ft. high, and another 900 ft. in length. At one point the Western Pacific engineers decided to excavate a cutting 118 ft. deep in order to avoid another tunnel and viaduct.



Gradient profile of the Western Pacific (Keddzie-Bieber) section

85-lb. rails with bearing plates on Oregon fir sleepers; 8 in. of gravel ballast are maintained under the sleepers.

### Keddzie Junction

The junction at Keddzie is unusual as it is triangular, and where one leg of the triangle diverges from the main Western Pacific line, both are on curved trestle viaducts over a ravine. Excavation necessary for the junction yard totalled 450,000 cu. yd., almost all of it being led to assist in forming the large quantity of fill required. A passing loop and three sidings each to hold 100 cars are provided, together with crossovers. The locomotive depot includes a four-stall roundhouse and a 120-ft. turntable.

A remarkable feature of this construction work was that it was almost entirely completed without the aid of a service or contractor's railway line. Except for short lengths in tunnels and at their approaches, no rails were laid before the final platelaying, and all transport was accomplished with caterpillar vehicles. The absence of long-span bridges made this possible.

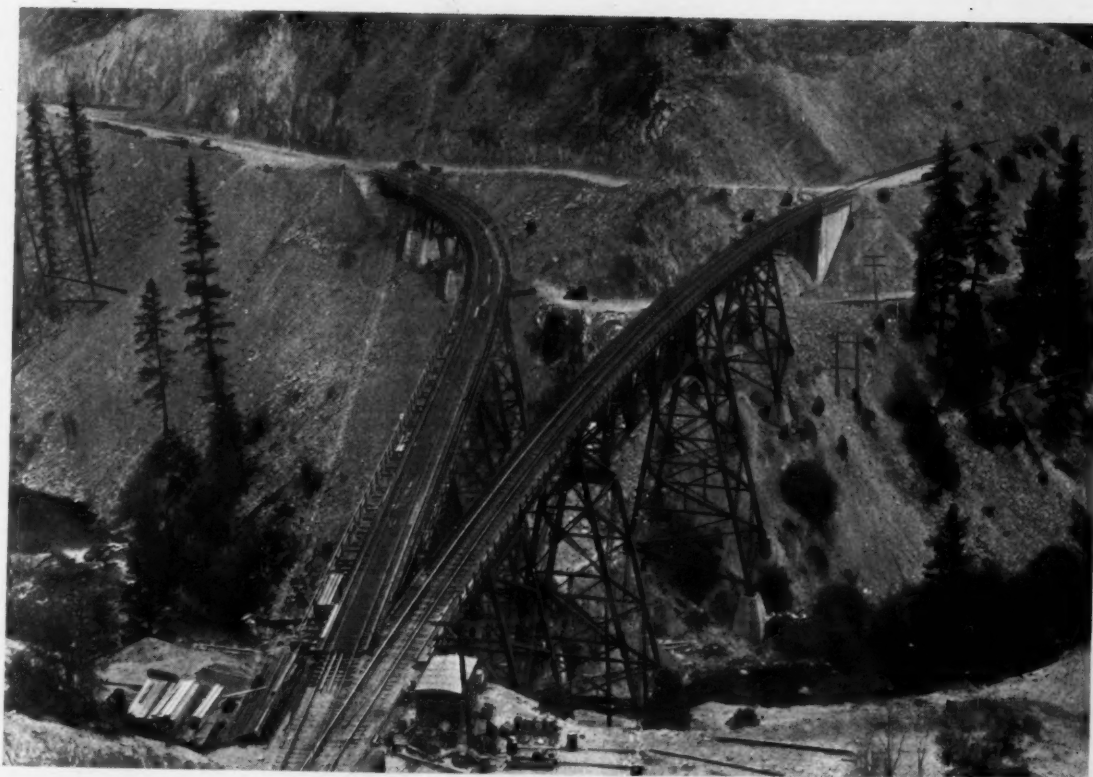
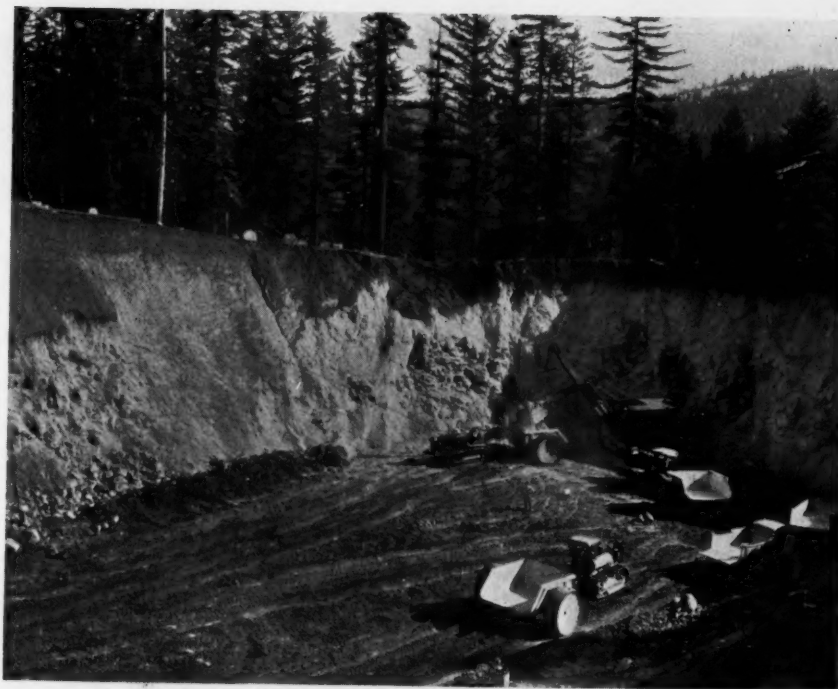
The southern part of the Western Pacific section traverses heavily timbered and very picturesque country, but towards Bieber it runs through lava country. About 400,000 acres of agricultural land and vast and valuable forests are tapped by the line.

### The Northern (G.N.) Section

On the Great Northern section north of Bieber, construction was less spectacular, but it also had its difficulties. Numerous and extensive caves in the lava under the clay overburden had to be negotiated, and in some cases these had to be filled in solid. The heaviest earthwork was involved in the great fill through the Tule Lake basin. It was found that with borrow pits within 100 ft. of the alignment, the



Work in progress on a cutting showing a caterpillar shovel filling one of the Ben Hur chariots, and a lorry, a caterpillar and trailer and other chariots waiting to be filled. This photograph was taken before the "big shot" blast was fired and shows the face of the cut which was subsequently blasted away



At Keddie the new line ends in a Y, the two arms of which form a triangle with the Western Pacific main line. The twin trestle viaducts seen above carry (left) the western arm of this Y, and (right) the main line from San Francisco to Salt Lake City. In the left background may be seen the eastern arm of the Y near its fork; this eastern arm passes in tunnel under the hill in the background to join the main line out of the picture to the right. Keddie station is situated on the main line just out of sight, also to the right



*Left: A typical length of nearly-completed formation between Bieber and Keddie*

earth dumped in the fill settled, causing the beds of the pits to heave upwards. Consequently all borrowed earth was led from beyond that distance with McMillan scrapers.

There are eight steel bridges and 40 timber trestles on this section, and the track consists of new 90-lb. rails laid on zinc-treated sleepers, 20 to a 39-ft. rail length. Crossing loops, 4,000 ft. in length, are provided every 10 to 15 miles, or at summits of gradients.

#### **Tourist and Through Traffic**

The opening of this line in the spring of 1932 at once stimulated tourist traffic west of the Rockies. Of considerable local tourist interest is Lassen Volcanic National Park, only nine miles from the railway. It contains Mount Lassen, the only active volcano in the United States. The chief importance of the line is, however, the fact that it completes one of the only two through routes between the network of railways serving Vancouver, Seattle, Spokane, and Portland in the north and San Francisco and Los Angeles in the south; also it is the nearer of the two north-south routes to the Rockies. Its location and connecting railways can be



*Below: One of the 12-cu. yd. Ben Hur chariots with caterpillar tractor*

seen from the accompanying map, which, like some of the information above, originated with our American contemporary, the *Railway Age*. On page 110 this subject is further dealt with in an editorial note.

### **Civil Aviation in New Zealand**

But for the war, commercial aviation companies in New Zealand would have exceeded all previous traffic records, according to the annual report on civil flying for the year ended March 31, 1940. A steady increase was shown on commercial services until shortly after the outbreak of war, but by November, 1939, the R.N.Z.A.F. had taken over 10 aircraft operated by commercial companies and a number of personnel had been called up. Route mileage fell from 2,015 to 1,720 at the end of September, 1939, and during November to 1,348. Despite the cancellation of some services and the rearrangement of others, most were carrying full loads. The three companies operating were Union Airways of New Zealand Limited, Cook Strait Airways Limited, and Air Travel (N.Z.) Limited. By March 31 the route mileage was still 1,348 miles and nine aeroplanes were being used. Union Airways was operating during the year with four aircraft over a route mileage of 1,440, covering the following services: Auckland—Wellington, Wellington—Dunedin, Palmerston North—Gisborne, Gisborne—Auckland, Palmerston

North—Christchurch. By October 25, 1939, the services from Palmerston North to Christchurch and Gisborne, and from Gisborne to Auckland were suspended and the other two services were reduced in frequency from daily to thrice-weekly. Cook Strait Airways operated services between Wellington, Blenheim, and Nelson, and between Nelson and Greymouth until November, 1939, making 17 scheduled trips a day on the cross-Strait services. When the company's aeroplanes were taken over by the R.N.Z.A.F., arrangements were made with Union Airways to operate seven daily cross-Strait services, and with Air Travel (N.Z.) to maintain the original schedule on the Nelson—West Coast service, under charter.

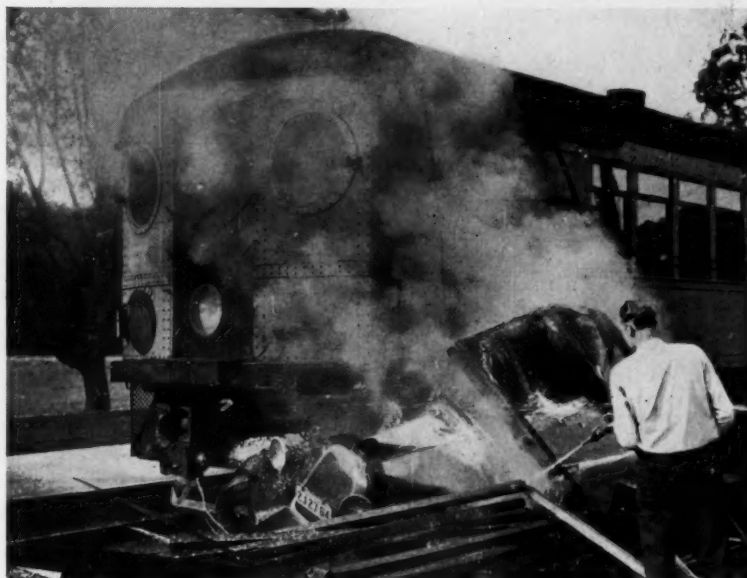
Air Travel (N.Z.) operated between Hokitika and Jackson's Bay and between Inchohonn and Weheka. Since November, 1939, the company has been operating the Nelson—Greymouth service for Cook Strait Airways and extended it to Hokitika, but in May last it was restricted to Nelson—Westport.

## LEVEL CROSSING ACCIDENTS IN THE UNITED STATES

*No fewer than 35 per cent. are caused by road motor drivers running into the sides of trains*

**D**ESPITE large sums of money spent in recent years on the elimination of level crossings in the United States, their prevalence, especially in and around cities, is still a grave source of potential danger, not only to road users but also to trains. There are about 231,000 crossings in that country, and their replacement by over- or under-bridges would, it is estimated, cost nearly \$20,000,000,000. In 1938, the latest year for which figures are available, no fewer than 1,090 out of a total of 3,089 level crossing accidents of all kinds, were due to motorcars or lorries being driven into the sides of passing or stationary trains, or 35 per cent., a remarkable proportion. Whether they run broadside on into trains or are caught by them head-on, motorists are undoubtedly tempted more often to take the risk of crossing lines in front of comparatively slow-moving freight trains. This is proved by the fact that 60 per cent. of the accidents involved such trains travelling at 20 m.p.h. or slower, mainly, of course, at unmanned crossings and those having no barriers, which are either protected only by flashing light or bell signals to warn road-users of the approach of trains, or are entirely unprotected. Our illustrations depict typical instances of different kinds of level crossing accidents. In our Road Transport Section for October 20, 1939 (page 514), we analysed these 1938 level-crossing accident figures, and the following are some of the outstanding points which emerged. These side collisions accounted for 253 deaths and 1,606

injuries; on 290 occasions the road vehicles were travelling at 40 m.p.h. and over; and midnight to 1 a.m. was the hour during which most of these accidents occurred.



*A collision between a private motorcar and a railcar on the North-Western Pacific Railroad. The driver of the car was killed after his car had been dragged 150 ft. and caught fire, but the railcar was not derailed nor seriously damaged*



*A collision between a lorry and a New York Central freight train drawn by a 4-8-2 locomotive near South Bend, Indiana, in which the engine tender and leading vehicles of the train were derailed and the fireman was killed. The driver of the lorry also lost his life. What little remains of the lorry may be seen under and beside the locomotive*





*Above: One of the new women ticket collectors on duty at a London station*

## British Railways and the War—55



*Right: A scene in the tunnel shelter at Ramsgate arranged in the old L.C. & D.R. tunnel approach to the former Ramsgate Harbour station. The narrow-gauge electric line to Dumpton Park (at present closed) may be seen*

*Photo by courtesy of "The Times"*



*Left: A Southern Railway fire squad drilling at a London main-line station. Right: Experimental use at Leyton station, L.N.E.R., of a masked lamp displaying the station name to assist passengers during the blackout*



## RAILWAY NEWS SECTION

### PERSONAL

The Secretary of State for the Colonies has recently approved the following appointment:—

Mr. F. Craig (Second Engineer, Lake Marine Service) to be First Engineer, Lake Marine Service, Kenya & Uganda Railways.

The Crown Agents for the Colonies have recently made the following first-class appointment:—

Mr. T. H. Baggaley, to be Assistant Mechanical Engineer, Palestine Railways.

It was announced by the Prime Minister of New Zealand on January 21, that Mr. R. Semple, Minister of Works in the New Zealand Cabinet, has relinquished his portfolio to take up that of Minister of Railways.

We regret to record the death in Rosario de Santa Fé, Argentina, on November 16, at the age of 78, of Mr. Charles Frederick Bowden, formerly Traffic Manager of the Buenos Ayres & Pacific Railway. He entered the service of the railway in 1885, and in 1888 was appointed Assistant to the Traffic Manager. In August, 1899, he was promoted to be Traffic Manager, occupying this position until December, 1921, when he retired on pension.

The general committee of the Diesel Engine Users Association announces that the Percy Still medal for the 1939/40 session has been awarded to Messrs. T. Hornbuckle and A. K. Bruce for their paper on "Herbert Akroyd Stuart and the Development of the Heavy Oil Engine."

We regret to record the death of Mr. W. Ernest Laycock, son of the late Mr. W. S. Laycock.

The death is announced at Biarritz at the age of 83 of the Marquis de Villavieja, whose father was the promoter of the Vera Cruz Railway.

We regret to record the death on January 28, in his 102nd year, of Mr. Henry George Drury, M.V.O., sometime Superintendent of the Line, Great Eastern Railway.

On page 97 of last week's issue we inadvertently announced the death of Mr. A. M. Clark, the Superintendent General, Commercial & Transportation Department, Bengal-Nagpur Railway. Actually it was Mr. A. M. Clark, sometime Agent of that railway and Member of the Railway Board, whose death occurred on January 16, at Bath.

Major F. A. Pope, Superintendent of Operation, London Midland & Scottish Railway, who, as recorded in our January 24 issue, has been appointed Manager, Northern Counties Committee, was educated at Leys School and joined the L.N.W.R. in 1909. During the last war he served in France from 1914 to 1916, and in the Salonica Force until 1919, attaining the rank of Major, which



Bel[ast]

Major F. A. Pope

[Telegraph]

Appointed Manager,  
Northern Counties Committee, L.M.S.R.

he has retained in the Regular Army Reserve of Officers—Royal Engineers. He was mentioned in despatches and was awarded the Greek Order of Merit and the White Eagle of Serbia. Major Pope was a member of the Inter-Allied Food & Transport Commission in re-occupied areas, and from 1919 to 1921 was on the staff of the Ministry of Transport. He returned to L.N.W.R. service in 1921, and from that date until 1925 served in the General Manager's Office, first of the L.N.W.R. and then of the L.M.S.R. In the latter year he was appointed Divisional Superintendent of the Nigerian Railway in connection with the reorganisation on the divisional system, and subsequently acted as Superintendent of the Line for periods in 1927 and 1929. He returned to the L.M.S.R. in 1930, as Assistant to the Chief Officer for Labour & Establishment. After visiting Canada and U.S.A.

to study North American railway methods, he became General Executive Assistant on Sir Josiah Stamp's staff at Euston. In 1932 Major Pope's services were first lent to the Government of India to proceed to that country, and, as Chairman of a selected committee of Indian railway officers, to suggest methods of increasing efficiency and effecting economy on Indian railways.

He returned to the L.M.S.R. in the spring of 1933, but went out to India again in October of that year, and the same committee, under his chairmanship, prepared a second report reviewing progress since the first report was issued and making additional suggestions for increasing efficiency and effecting economy. On his return from India in 1934, Major Pope, after a period as Divisional Superintendent of Operation, Crewe, was appointed General Assistant, Chief Operating Manager's Department, L.M.S.R., and in July, 1938, became Superintendent of Operation. In March 1940, he was released from railway service on his appointment as Director of Railways with the B.E.F., France. He was given the acting rank of Colonel under the Director-General of Transportation. Major Pope returned to take up his post of Superintendent of Operation after the capitulation of France and the consequent withdrawal of the B.E.F.

Mr. Lionel Edouard Wiener, whose death we recorded in our January 24 issue, was born in Brussels in 1879, and was the son of Edouard Wiener, a banker, and the grandson of Jacques Wiener, a well-known engraver who made the first Belgian stamps. Mr. Wiener was trained as an artillery officer and passed through the Ecole Militaire, later taking a special degree in railway engineering at Liège University. After he left the army he went to Sandur, India, to build an ore-carrying aerial railway. He then spent several years in Brazil with the Chemins de fer Auxiliaires du Bresil, of which he was for some time Chef du Service de l'Exploitation. When the company passed into the control of an American group, he was employed as its European Manager, residing in Paris. Later he left Paris and went to Sofia to study the possibilities of railway development in the Balkans, and rendered good service to the Allies at the beginning of the last war. Mr. Wiener's health made it impossible for him to rejoin the Belgian Army, but he acted as an Adviser for the future reconstruction of the Belgian railways. After the war he returned to Brussels and became General Manager of the

Compagnie Générale de Chemins de fer Secondaires, now called the Compagnie Belge de Chemins de fer et d'Entreprises. Mr. Wiener was a delegate of the company at the Thirteenth International Railway Congress held in Paris in 1937, and represented it on the boards of its affiliated companies for some time, but subsequently relinquished that position and became a Director with special duties. He was at one time Managing Director of the Hungarian private railways belonging to the Cie. Belge de Ch. de fer et d'Entreprises, and a Director of the company controlling the Zeebrugge—Harwich ferry boats. Some years ago he became Professor of Overseas Railway Engineering at Brussels University, and was a Member of the Institut Royal Colonial and of various scientific and technical societies. He was a frequent contributor to both the British and European technical press, particularly to the *Bulletin* of the International Railway Congress Association, and had frequently written for THE RAILWAY GAZETTE, which published the English edition in book form of his serial article in the *Bulletin* on "Passenger Tickets." One of his best-known works was "Articulated Locomotives," of which the English edition was published by Constable & Co. Ltd. in 1930. Mr. Wiener's hobbies included fine collections of passenger tickets, postage stamps, and theatre programmes. He was the author of an operetta which was produced in Brussels and Paris, and also wrote on the history and methods of printing and reproducing picture postcards. He was the recipient of orders and decorations from several countries; these included the Order of Léopold, Legion d'Honneur, Order of the Nile, etc.

We regret to record the death of Captain H. J. Horsey of the Royal Air Force. Captain Horsey served with the R.N.A.S. and R.A.F. during the last war. After the war he joined the Supermarine Aviation Works Limited and served later with the associated company, the British Marine Air Navigation Co. Ltd., as a flying-boat pilot on the route from Southampton to the Channel Islands until, with the amalgamation in 1924, he became one of the now fast-dwindling founder-pilots of Imperial Airways. He flew on all the routes, both European and Empire, and on landplanes and flying boats until the outbreak of this war, when he and the other European Division pilots were employed in national air communication to France. He subsequently took over the flying instruction of landplane pilots in England until a branch pool of the Air Transport Auxiliary was formed, composed of British Overseas Airways Corporation pilots. In this pool he acted as a flight commander, and it was while ferrying a fighter aircraft for the Royal Air Force that he met with the accident which caused his death.

## STAFF AND LABOUR MATTERS

### Man-Power in Industry

When he opened the debate on man-power in the House of Commons on January 21, Mr. Ernest Bevin, Minister of Labour & National Service, announced that it would be necessary to have industrial registration by age groups. To meet the demands of production, said Mr. Bevin, the Government looked to the surplus man-power available in the manual classes—but he could assure the House that that reservoir was practically dry. The mobility of labour was seriously handicapped through want of accommodation and the shortage of materials necessary for new construction.

His reply to those who suggested there was no wage policy, was that a wise step was taken in relying on the sense of responsibility of the organisations in industry. Wage rates should not be confused with earnings. Where work-people increase their earnings as a result of increased production it should be encouraged. To meet the requirements of the Services it would be necessary both to reduce the numbers covered by the Schedule of Reserved Occupations and to call up further age groups. He expected that before long arrangements would have to be made for registering men of 19 as well as those over the age of 36. These demands for the Services would deplete still further the resources from which the additional requirements of munition work and civil defence might otherwise be met.

It was proposed to meet the position broadly in two ways—by tapping our unused resources and by ensuring that our labour force was employed to the fullest possible advantage. New labour forces must be drawn from non-essential occupations of whatever rank and from the unoccupied. It would also be necessary to see whether work which could be done by women was being performed in the Services by men in uniform. As for persons employed in offices and on managerial and on supervision work of all sorts, firms would have to make careful survey and see how many men could be placed into productive work.

We have now reached the stage, said Mr. Bevin, when it will be necessary to have industrial registration by age groups and to make a list of those who can be called upon to serve the State in national industry.

In certain types of vital war work it would have to be laid down that the right of dismissal must be taken out of the hands of the employer except for misconduct. If a person's services could no longer be used in a particular place, it would have to be reported to the employment department so that his services might be used elsewhere. No employee would be permitted to leave vital work without the permission of a national service officer. In each case there would be the right of appeal. The actual industries would be announced. If an employer or em-

ployee broke these orders he would be committing an offence. If a person had been wrongly stood off, and could prove he had been so treated, he would have to be paid for the time lost. If a person stayed away from his job he could be ordered to return to his place of employment. Machinery would be necessary to deal with complaints and appeals. It was proposed that transferred workers should be reinstated in their former employment after the war in the same way as men called up for the Forces.

Where arrangements for proper labour management or workshop consultation did not exist, a personnel controller must be appointed for the undertaking. It would be necessary to take steps to prevent systematic and organised short time, and, if necessary, to prescribe the minimum number of hours of work in any undertaking.

### Engineering and Shipbuilding Wages

The National Arbitration Tribunal has issued its award on the claims of the trade unions in the engineering and shipbuilding industries for increased wages. It has awarded, in both industries, an increase of 3s. 6d. a week. The engineering industry is dealt with in three awards. Award No. 56 deals with the claim of the Amalgamated Engineering Union for an increase of 3d. an hour on the basic rate, and the restoration of pre-June, 1931, working conditions. Award No. 57 deals with a similar claim of the National Union of Foundry Workers, and Award No. 58 deals with the claim of the Engineering Joint Trades Movement, representing about 40 unions, for an increase of 10s. a week for timeworkers, with an equivalent to men employed on payment by results.

The shipbuilding industry is dealt with in award No. 59, and the claim is by the Confederation of Shipbuilding & Engineering unions for an increase of 10s. a week to plain time workers, with a corresponding advance to pieceworkers. The award states that statements were made and documents submitted as to the number of employees affected, the course of basic rates and bonuses in the industry over a period of years, the war bonus granted in February, 1940, rates of remuneration in other industries, average earnings at various periods in shipbuilding and in other industries, the economic and financial position of the industry, changes in the cost of living index figure, the estimated cost of the proposed increase, and the anticipated effect of a wage increase on the national economy. In all the awards the tribunal states it had regard especially to the course of wages in the industry over a number of years and to the extent to which up to the time of the hearing wages had been adjusted to the conditions of the present time both in the shipbuilding and engineering industries and in general.

The increases have effect from the first full pay period after January 20.



## TRANSPORT SERVICES AND THE WAR—75

*Railway stations in prohibited areas—New cross-country through service—Canadian National Railways war effort—Railways in German-occupied Poland—European rail traffic curtailments*

The announcement made by the Minister of Home Security on December 7 that the coastal areas upon which restrictions were imposed as to visits for purposes of holiday, recreation, or pleasure, had been reduced for the present, has resulted in a considerable reduction in the numbers of railway stations included in the "restricted list." The original list was published at pages 902-3 of our June 27, 1940, issue, and the subsequent addition of North-East Coast and South Coast Defence Area restrictions resulted in the issue of a supplementary list which we included at page 77 in our July 19, 1940, issue. The present restrictions referred only to the following areas:—

- (i) A coastal strip of approximately five miles depth in Norfolk, Suffolk, and Essex;
- (ii) The whole of Kent except those parts of the county within the boundaries of the Metropolitan Police District, the Urban District of Orpington and the Rural Districts of Sevenoaks and Tonbridge;
- (iii) The coast of Sussex east of Peacehaven and extending inland to the northern boundaries of Battle and Hailsham Rural Districts;
- (iv) The Isle of Wight.

Accordingly the main-line railway companies have issued a new list (reproduced herewith) showing the railway stations in the areas which persons are prohibited from entering for the purpose of a holiday, recreation, or pleasure. As the areas concerned are in East Anglia, Kent, Sussex, and the Isle of Wight, the directions under Defence (General) Regulation 16A

have been given by the Regional Commissioners for the Eastern and South-Eastern Regions. The directions do not apply to persons ordinarily resident in the areas. Where more than one station serves the same town or place, all such stations, although not named, are included in this restriction.

## L.M.S.R. Timetable Alterations

From February 3 a new sleeping car express will leave Glasgow Central (Saturday nights excepted) at 10.8 p.m. for Birmingham, conveying the sleeping car and through coaches run hitherto on the 9.38 p.m. London train; the new service will be due in Birmingham at 6.30 a.m. The 12.15 p.m. from Euston ceases to convey a through portion for Llandudno, but instead has a section for Barrow, reaching there at 8.45 p.m.; the through coaches for Barrow on the 10.40 a.m. from Euston are due there at 7.46 instead of 5.58 p.m., and the through Barrow section of the 4.5 p.m. Euston to Blackpool is withdrawn. In connection with the London trains, the 6.15 p.m. from Barrow to Millom is extended to Whitehaven, and the 7.35 p.m. Barrow to Whitehaven is to start at 8.20 p.m., calling only at Foxfield to Millom, and thence at most stations to Whitehaven (10.12 p.m.), beyond which it is extended to Workington. The 4.50 p.m. from Euston

Acle	Chartham	Gorleston-on-Sea	Lenham	Rainham (Kent)	Tenterden
Adisham	Chatham	Goudhurst	Leysdown	Ramsgate	Teston Crossing halt
Aldeburgh	Cheriton Halt	Grain Crossing halt	Lingwood	Rayleigh	Teynham
Aldeby	Chestfield & Swalecliffe halt	Gravesend	Longfield halt	Raynham Park	Thorington
Allhallows	Chilham	Great Bentley	Lowestoft	Reedham	Thorpe Bay
Alresford (Essex)	Chisle Colliery halt	Great Ormesby	Lydd	Richboro' Castle halt	Thorpe-le-Soken
Althorne	Clacton-on-Sea	Greatstone-on-Sea	Lyminge	Robertsbridge	Thorpness
Alverstone	Cliffe	Greenhithe		Rochester	Three Oaks & Guestling halt
Appledore	Collington halt	Grimston Road		Rochford	Thursford
Ardleigh	Coltishall	Grove Ferry	Maidstone	Rolvsden	Thurhurst Road
Ashey	Cooden Beach	Gunton	Maldon East & Heybridge	Ryland	Tilmanstone Colliery halt
Ashford (Kent)	Corton		Manningtree	Rye	Tipree
Ash Town	Cowes	Hacheston halt	Marden	Rye	Tollesbury
Aylesford	Cranbrook	Haddiscoe	Margate	St. Helens (I. of W.)	Tolleshunt D'Arcy
Aylesham halt	Cromer	Hailsham	Marks Tey	St. Lawrence halt (I. of W.)	Tolleshunt Knights
Aylsham	Crowthurst	Halesworth	Marlesford	St. Leonards	Tovil
	Cuxton	Halling	Marham for Rolesby	St. Olaves	Trimingham
Barham		Hampden Park	Martin Mill	Salehurst halt	Trimley
Barming	Darsham for Yoxford	Ham Street & Orlestone	Massingham	Sandgate	
Battle	Dartford	Harrietsham	Melton	Sandling Junction	Uralite halt
Bealings	Deal	Harty Road halt	Melton Constable	Sandown	
Beardst & Thurnham	Denton halt	Harwich-Parkeston Quay	Merstone	Sandwich	Ventnor
Beccles	Dersingham	Hastings	Middle Stoke halt	Sandwich Road	
Bekesbourne	Ditchingham	Haven Street	Middleton Towers	Saxmundham	Waldron & Horam
Belton & Burgh	Doleham halt	Hawthurst	Mill Hill (I. of W.)	Saxmundham	Walmer
Beltring & Branbridges	Dover	Headcorn	Milton Range halt	Sedgeford	Walsingham
	Dovercourt Bay	Hellingley	Minster Junction	Selling	Walton-on-the-Naze
Beluncle halt	Dumpton Park	Hembsby	Minster-on-Sea	Shanklin	Watchingwell
Bembridge		Herne Bay	Mistley	Sharnal Street	Wateringbury
Benfleet	Eastbourne	Higham	Mountfield halt	Sheerness	Weeley
Bentley (Suffolk)	Eastchurch	Hillington	Mundesley-on-Sea	Shepherds Well	Wells-on-Sea
Berney Arms	East Farleigh	Hockley		Sheringham	Westcliff-on-Sea
Berwick (Sussex)	East Malling halt	Hollingbourne	Narborough & Pentney	Shide	Westenhanger
Bexhill	East Minster-on-Sea	Holme Hale	Newchurch	Shoeburyness	Westgate-on-Sea
Biddenden	East Rudham	Holt	Newhaven	Shorndcliffe	West Runton
Birchington-on-Sea	Eastry Junction	Honington	New Hythe	Sidestrand halt	Weybourne
Bishopscourt	East Winch	Horrington	Newington	Sidley	Whippingham
Bishopstone	Elham	Hothfield halt	Newport (I. of W.)	Sittingbourne	Whitlingham
Blackwater (I. of W.)	Ellingham	Hunstanton	New Romney	Smeeth	Whitstable
Bodiam	Elvington (Kent)	Hythe (Essex)	Ningwood	Snettisham	Whitwell (I. of W.)
Bradfield	Eynsford	Hythe (Kent)	Norman's Bay Halt	Snodland	Wickham Bishops
Bradling	Eythorne		Northfleet	Snowdown & Nonington halt	Wickham Market
Brambledown halt			North Walsham		Wighton Halt
Brampton (Suffolk)			North Wootton		Winchelsea
Bridge	Fakenham			Sole Street	Wingham
Brightlingsea	Fambridge			Somerleyton	Wittersham Road
Broadstairs	Farningham Road & Sutton-at-Horne			Southend	Wivenhoe
Brookland halt	Faversham			Southfleet	Wolferton
Brundall	Fawham			South Lynn	Woodbridge
Brundall Gardens halt	Feering halt			Southminster	Woodham Ferrers
Buckham	Felixstowe			Southwold	Woodnesborough
Burnham-on-Crouch	Felmingham			Stalham	Woodnesborough Road
Burnham Market	Folkstone			Stanhoe	Wootton
Buxton Lamas	Framlingham			Staple	Worstead
	Freshwater			Staplehurst	Worthing
Caister-on-Sea	Frinton-on-Sea			Stoke Junction halt	Wrotham & Boro' Green
Caibourne & Shalfleet	Frittenden Road			Stone Crossing halt	Wroxall
Canterbury				Stonehall & Lydden halt	Wroxham
Cantley	Gayton Road			Strood	Wye
Carisbrooke halt	Geldeston			Sturry	
Catfield	Gillingham (Kent)			Swale halt	Yalding
Chalkwell	Godshill halt			Swanley	Yarmouth (Great)
Chappel & Wakes Colne				Swanscombe halt	Yarmouth (I. of W.)
Charing					

List of stations in the areas which persons are prohibited from entering for holiday, recreation, or pleasure

will cease to convey a through Holyhead portion, and the Llandudno coaches on the 4.5 p.m. will be extended to Holyhead instead; the Holyhead section of the 10.30 a.m. Liverpool express from Euston is to terminate at Bangor. Restaurant cars are withdrawn from the 8.45 a.m. from Euston to Wolverhampton and the 4.20 p.m. from Wolverhampton to Euston. In further pursuance of the policy of stopping up expresses for London in the outer suburbs, on the Midland Division the 10.0 a.m. from Glasgow (St. Enoch) and the 5.50 p.m. from Manchester (Central) both now call at St. Albans to set down passengers, at 8.35 and 10.55 p.m. respectively. In Scotland the 9.30 and 9.38 p.m. sleeping car trains from Glasgow (Central) to Euston, as well as the 8.35 p.m. from Perth to Euston, are no longer advertised to call at Carstairs, and the 9.20 p.m. connection from Edinburgh is withdrawn; this now leaves Edinburgh (Princes Street) at 10 p.m., in connection with the new 10.8 p.m. from Glasgow to Birmingham.

#### A New Cross-Country Through Service

A through passenger service, advertised as having limited accommodation and a buffet car, is now running daily between Ashford (Kent) and Newcastle-on-Tyne. Leaving Ashford at 8.45 a.m., it calls at Paddock Wood, Tonbridge, Redhill, Dorking, Guildford, and Aldershot (North Camp), to Reading, where it is taken over from the Southern Railway by the G.W.R. Leaving Reading at 11.50 a.m., the through train calls at Oxford to Banbury, reached at 1.17 p.m., and from here the L.N.E.R. takes over; after starting from Banbury at 2.13 p.m., calls are made at Leicester, Nottingham (Arkwright Street and Victoria), Sheffield (4.43/4.55 p.m.), York (6.25/6.35 p.m.), Northallerton, Darlington, and Durham, and Newcastle is reached at 8.45 p.m. In the reverse direction departure from Newcastle is at 8.10 a.m., and with the same stops Ashford is reached at 8.32 p.m. In addition to the value of this through communication, the train performs valuable service in the Midlands by improving the midday communications between Leicester, Nottingham, and Sheffield.

#### Glasgow Subway

The Glasgow Corporation Transport Department resumed service on the Glasgow Underground Railway on Monday last, January 27, having completed a considerable amount of reconstruction work. Service has been suspended for some months.

#### The Canadian National Railways War Effort

The following are extracts from a statement made by Mr. S. J. Hungerford, Chairman and President of the Canadian National Railways on December 26, when he described their contributions to the national war effort. After mentioning that the handling of special wartime movements of thousands of men of the Navy, Army, and Air Force had been the concern of all departments of the C.N.R., he said :—

"Less in the public eye, but extremely important, has been the task of moving thousands of trainloads of construction materials, machinery and equipment to the new manufacturing plants. As those plants are completed, there comes the work of transporting to them large tonnages of many kinds of raw materials, and carrying to ocean shipping points the production of war material and equipment. Besides meeting the transportation requirements of Canada's fast-growing munitions industry, the country's railway transportation facilities must maintain the flow to the United Kingdom and other countries of timber, metals, grain, meat, etc."

"To meet the increased war demands, the C.N.R. has added 2,760 new box cars, 500 flat cars, 100 refrigerator cars, 30 mail, express, and baggage cars, 150 ballast cars, and 25 heavy duty steam locomotives to its equipment."

"Increased traffic due to war conditions made advisable certain additions to track facilities by way of passing tracks, sidings and yards. Further additions to physical facilities are under study and consideration to meet growing wartime demands for railway transportation service."

#### Railways in German-occupied Poland

From reports recently received in this country it appears that the German-occupied authorities are reorganising the transport systems of Poland on the same general principles as those adopted in Germany proper under the Decree of September, 1940, of which brief details were given at page 101 of our January 24 issue.

A few days before Christmas the German and Soviet Governments announced that the new German-Russian frontier across Poland had been finally settled and that all work connected with it had been completed. Two new German-Soviet agree-

*Billy Brown  
of London Town*



'Yousee, my dear', said BILLY BROWN.  
'How transport services in town  
Begin their main rush-hours by 4  
(Much earlier than before the war).  
And so, when shopping, it's my view  
That you and other shoppers too  
Should try to start for home by 3'.  
'I will, my dear', said Mrs. B.

*Printed for  
London Transport*

*Billy Brown  
of London Town*



When BILLY BROWN goes out at night  
He wears or carries something white.  
When Mrs. Brown is in the blackout  
She likes to wear her old white mack out.  
And Sally Brown straps round her  
shoulder  
A natty plain white gas-mask holder.  
The reason why they wear this white  
Is so they may be seen at night.

*Printed for  
London Transport*

#### Two more London Transport newspaper advertisements in the Billy Brown series

ments were signed on January 10. One provided for the renewal and amplification of the trade agreement between the two countries. The other fixed the frontier between Soviet Russia and Germany along the line of the "former Polish-Lithuanian and German-Lithuanian frontiers."

Last October it was reported that Jews were forbidden to use the railways in the parts of Poland under direct German government, and that Poles were allowed to travel only third class. It was stated that on the door of the waiting room at Krakow railway station there was an inscription indicating that its use was permitted only to *Reichsdeutsche, Volksdeutsche*, and Ukrainians. Another transport regulation of a similar kind came into force on December 2 in Posen. This forbids Poles to travel in the front cars on the tramways, which are reserved for Germans, and to use only the trailers. During rush hours Poles are not permitted to use tramcars at all because, in the words of the regulation, "their presence would disturb Germans going to work."

#### Railways in Czecho-Slovakia

The transport section of the Protector's office in Prague has under consideration a number of railway schemes, some of which are being carried out already. Since the establishment of a customs union with Germany, all frontier customs stations, over 40 in number, have been closed and are being dismantled. Operating reorganisation is taking place in order to provide for north-south main lines, instead of the east-west main line operation in force on the Czecho-Slovak railways of pre-war years. This involves transfer of divisional offices, of principal locomotive sheds, rolling stock, etc., as well as certain alterations and extensions to junctions and principal stations. Another measure has been the rescinding of the former administration's decision to close a number of branch lines; they are to remain open as road transport has been severely restricted. Standardised rates and fares conforming with German practice are gradually being introduced.

In Sudetenland there are a number of schemes in progress or planned. Immediately after the transfer of the territory to German rule in 1938, work on the main line Eger—Bodenbach—Wiesau—Markredwitz—Hof was taken in hand. Extensions to stations and heavier track are the main improvements. A special motor road from Eger to Reichenberg was built, and others planned, but held over first by the

establishment of the Protectorate of Bohemia & Moravia and then by the war. The plans now in contemplation are for new railways and roads in thinly populated areas to assist repopulation, and for more direct communication with Germany proper. The Eger-Reichenberg road is to be extended to Görlitz to connect with roads to Dresden and Berlin, and a north-south road is projected from Dresden via Aussig, Prague, and Brunn, to Vienna. New railways planned are direct lines Chemnitz-Weipert-Karlsbad, and M. Schönberg-Romestadt-Troppau. Reichenberg is to have better routes to Dresden and to Silesia. Ambitious plans for waterways connecting Sudetenland with the Elbe, Oder, and Danube basins are also being studied.

#### Rail Communication Between U.S.S.R. and Hungary

Negotiations were reported on January 19 to be in progress in Moscow between the U.S.S.R. and Hungary for the establishment of direct rail communication between Lemberg (Lwow) and Batyu, where the existing line across the Carpathian mountains in Ruthenia joins the main Valea-Tarackoz-Csap-Budapest line. The frontier points are Veskid and Kisszolyva on each side of the boundary between Soviet-occupied Poland and the Ruthenian province of Czecho-Slovakia.

#### Hungarian Rail Traffic Curtailment

Railway passenger traffic in Hungary is being curtailed between 10 and 12 per cent., according to an announcement of the Ministry of Communications on January 22. The reasons given are that the number of locomotives is insufficient, and that the Danube is frozen, placing on the railways the burden of maintaining east-west traffic. The temporary three-day cancellation of virtually all passenger trains from midnight on January 16 was recorded at page 102 of the January 24 issue.

A few days afterwards Count Teleki, the Hungarian Prime Minister, informed Parliament of even more drastic cuts, amounting to the reduction by half of all railway passenger traffic, according to the Budapest radio of January 26. Count Teleki gave the following reasons: (1) In two years there had been a 47 per cent. expansion of the railways; (2) further overloading of the lines was caused by the Danube becoming frozen last month; (3) there was a shortage of locomotives, the number for every 100 km. falling from 21 to 18; (4) there was a shortage of coal, against increased consumption requirements. Count Teleki expressed the hope that passenger traffic would be increased in the spring, with the coming of better weather.

#### Transport and Oil in Roumania

Ever since the outbreak of the present war we have recorded in these columns from time to time the important changes in transport conditions in Roumania and neighbourhood, and have pointed out their import so far as concerns German supplies of oil. The latest authoritative statement on the position is made by Mr. H. G. Austin, formerly factory representative in Roumania of the Oil Well Supply Company, who returned from that country recently. Since the publication of our account of Mr. Austin's remarks addressed to members of the Fuel Luncheon Club (see page 77 of our January 17 issue), Mr. Austin has further amplified some of the transport considerations in an interesting letter to us in which he points out that the undoubted ability of German railway engineers to increase rail capacity is nevertheless faced in Roumania by very different physical conditions from those prevailing in flatter territories. In an editorial note in our issue of January 17 we pointed out that in a period of only some six months after the *Anschluss*, the 50-mile single line between Passau (on the former Austro-German frontier) and Wels (on the Salzburg-Vienna main line) was doubled under the drive of necessity.

In regard to Roumania Mr. Austin observes that the two single-track lines now being used to carry oil towards Germany are more than 300 miles long from Ploeshti, the main oil refining centre, and the Hungarian and Yugoslav frontiers respectively. On the line through the Predeal Pass to Oradea Mare and thence to Hungary, a glance at any contour map will show that there are long stretches of line running through mountainous country. Railway travellers in Roumania will

recall that the single line through the mountainous parts invariably runs alongside a small and fast mountain stream, and the defiles are often a matter of only 30 ft. across, including both rail track and the stream. Under such conditions, with towering cliffs often on both sides, any work of doubling the line, over 300 miles long, would take years, using good labour. The second line, through Craiova, Timishoara, to Yugoslavia, also runs through many mountainous stretches, particularly before Turnu-Severin, and between that town and the flat plain around Timishoara. The work of cutting out precipitous mountain-sides to double the track through the defiles of either railway would not only take a considerable amount of time, but would also interfere badly with the vital rail transport of oil and cereals.

The Roumanian workmen, from long experience, can be considered as ignorant and lazy people. In heavy manual labour, it takes at least three Roumanians to do the work accomplished by one average British or American workman. Most of the work done on the railways during the past two years has been done by forced labour. Conscripts have been called up and drafted into labour battalions, poorly fed, and generally devoid of any incentive to do good or fast work.

In regard to possible laying of pipelines, it is authoritatively reported that two more pipelines are being laid over the distance of 80 miles from Ploeshti to the Danube river port of Giurgiu. Two lines are already in service, but both have been used for crude oil or partly treated crude. Inasmuch as the refining capacity in Roumania far exceeds present crude oil production, it is evident that the Germans are endeavouring to lay new lines for the more valuable refined oil products. It is a matter of great difficulty to clean pipelines previously used for crude oil, to make them fit for pumping through refined products.

A question has been raised as to the laying of a pipeline direct from Ploeshti through to Germany. As already shown, the distance over the route, which would have to follow the railway line through the many ranges of mountains, is over 300 miles to the Roumanian frontier, and then a further great distance through Hungary or other intervening states. Such a pipeline would take years to construct, and again would cause dislocation of the single track rail traffic, carrying vital products to Germany, as, to avoid the many pumping stations otherwise needed, the pipeline would have to run alongside the existing railways.

A pipeline along the banks of the Danube is a possible proposition, but it would take too long to lay, and would almost certainly be destroyed by icing conditions in the river, or by floods which always follow the spring thaw. As matters stand, Mr. Austin concludes, one can take it, with every assurance, that the only possible avenue for increased transport of oil and cereals from Roumania to Germany must be by river, up the Danube, which is frozen for at least two months a year.

#### Drastic Restrictions on Italian Railways

Vigorous measures have just been sanctioned in Rome to overcome the prevailing congestion of goods traffic on the Italian State Railways, with the aim of keeping open lines over which military trains pass, eliminating bottle necks, and permitting maximum speed, according to a message dated January 23 to *The Times*. Regulations which have been in force since 1933 requiring the Italian State Railways to deliver transported goods within a stipulated time have been suspended, and State, private, and international lines—so far as the last-named are inside Italy itself—are now allowed twice their former times for delivery. Heavy penalties are imposed on those consignees who do not unload merchandise within a prescribed time. By the inflexible application of these new regulations it is expected, says an official spokesman in Rome, that all main lines will be freed for top-speed military transport to feed "the great Mediterranean effort of the combined Axis Powers."

#### The German "Westmark"

Gauleiter Bürckel declared on November 30 last that Lorraine and the Saar had been incorporated as the German *Westmark*, with a status similar to the *Ostmark* (Austria). He did not say what position had been given to Alsace, but, as long ago as September 2, Gauleiter Wagner declared that Alsace had never been more than an "artificial French



creation" that would be simply merged into the Reich without further formality.

#### British Advance in Eritrea

The advance of the British Imperial Forces into Eritrea after the recapture of Kassala, recorded in these columns last week, brought them to Biscia by January 26, on which day that town was reported from British G.H.Q. at Cairo to be in our hands. Biscia is the railhead of the Eritrean railway which runs from that town 140 miles to the capital, Asmara, and thence to Massaua, which is the chief port of Eritrea. British advanced units were on the same day reported to be moving towards Agordat, the next important town to Biscia on the railway.

#### Air Lines

The passenger and mail air line between England and Portugal (Lisbon) is now maintained by the K.L.M. (Royal Dutch Air Lines) on four days a week. At least three services weekly are also operated by flying boats of the British Overseas Airways Corporation. The first experimental British service began on April 9 last, and regular operation on June 4; the K.L.M. opened an Amsterdam—Lisbon passenger-carrying service on April 19 of last year. For some months past the K.L.M. has been co-operating in the maintenance of the British service. The flying boats *Clare* and *Clyde*, used last summer on the British transatlantic flights, are now maintaining the new air line between England and West Africa (Lagos), via Lisbon, which was inaugurated towards the end of last year, and to which we referred at page 102 of our January 24 issue.

Two British aerodromes recently approved as Customs

aerodromes are: St. Eval airport, Cornwall; and Chivenor airport, Devon.

According to the Stockholm radio, the German authorities have agreed to the opening of a regular air line with Swedish aircraft between Sweden and Denmark, as the shipping services have almost ceased.

It is reported that air lines are being established between Copenhagen and the remote Danish islands.

The Swedish Government has granted permission for German commercial aircraft to fly over Sweden, according to the Copenhagen radio. This will permit Stockholm being linked directly with Oslo for the first time since the German occupation of Norway.

A new air line linking Moscow with Anadyr, in the Arctic, was opened on January 17.

A recent mishap to an Italian commercial aeroplane while flying from Natal (Brazil) to Europe has drawn attention to the fact that, despite the British blockade, the Italians are continuing to maintain their weekly flights with land planes between Rome and Rio de Janeiro, the capital of Brazil. This air service is understood to prove of considerable value to the Axis powers in enabling them to transmit mail without great risk of confiscation or censorship at British-controlled stations. Enemy mail for the U.S.A. is also conveyed on this service, being transferred from the Italian planes to Pan-American aircraft which take it to Buenos Aires and then northward up the West Coast route avoiding Trinidad. Between June 10 last (when Italy entered the war) and December 23, Italian aircraft made 13 westbound and 15 eastbound flights on the Rome to Rio de Janeiro service. The Italian company responsible for the operation is the Lati.

### Contracts and Tenders

The Bombay, Baroda & Central India Railway has placed an order, to the inspection of Messrs. Rendel, Palmer & Tritton, with the Monkbridge Iron & Steel Co. Ltd. for 198 steel tyres for locomotives.

The South African Railways are calling for tenders for 10 third class motor-coaches, 11 second class coaches, spare motor bogies and electrical equipment, all required in connection with the extension of the 3,000-volt d.c. electrification in the Durban area. Tender No. 2554; offers to be in at Johannesburg by June 30, 1941.

Turkish State Railway officials are leaving for Great Britain shortly, Reuters reports from Ankara. They will negotiate for the purchase of a number of locomotives and wagons and make arrangements for their shipment.

The British Supply Council in North America has been set up with Mr. Arthur B. Purvis as Chairman and Mr. Morris Wilson Deputy Chairman. Sir Clive Baillieu has been appointed to succeed Mr. Purvis as Director-General of the British Purchasing Commission. The council will deal with all issues of policy concerning supply, including representations to be made to the United States Administration. The members in addition to Mr. Purvis and Mr. Morris Wilson will be Sir Clive Baillieu, Sir Henry Self (Director-General of the British Air Commission), and Vice-Admiral A. E. Evans (head of the Admiralty Mission in Canada). There will be no alteration in the relations between the Supply Departments in this country and the Department of

Munitions & Supply in Canada, but Mr. Howe, the Canadian Minister of Munitions & Supply, has agreed to become a member of the British Supply Council.

The Bolivian Government requires tenders for the construction of 275 km. of line between São Jose de Chiquitos to Santa Cruz de la Sierra on the new Santos—Arica transcontinental route of which a map and description appeared in our January 24 issue. An important part of this line is a bridge over the Paraguay at Porto Esperanza, which is to be about 2,000 m. long and 20 m. above the water level.

It is reported that in connection with the electrification of the Sorocabana Railway, the contract for which was reported in our issue of October 4, 1940, 20 electric passenger and freight locomotives and four triple-car multiple-unit trains have been ordered from the Electrical Export Corporation, the subsidiary of the General Electric Company and the Westinghouse Electric & Manufacturing Company.

The South African Railways & Harbours Administration is calling for tenders for the supply and delivery of 3-ton four-wheel motor chassis. Tenders should reach the Secretary to the Tender Board, Room 31, South African Railways & Harbours Headquarters Offices, or P.O. Box 7784, Johannesburg, by 1 p.m. on March 3.

### Forthcoming Events

Feb. 5 (Wed.).—Institute of Transport, at Connaught Rooms, Great Queen Street, London, W.C.2, 12.45 for 1.15 p.m. Luncheon, followed by an address by Mr. Gilbert S. Szlumper, C.B.E., T.D.

### Railway & Other Reports

**White Pass & Yukon Railway.**—Report to June 30 shows profit, after charging debenture interest, of £3, compared with £36 in the previous year. Debit balance brought forward is £269,923, and deducting the profit, leaves £269,920 carried forward.

**Laycock Holdings Limited.**—Final dividend is 6½ per cent., less tax, making 10 per cent. for the year 1940, which compares with 11½ per cent. for the 18 months to December 31, 1939.

**Greenwood & Batley Limited.**—An interim ordinary dividend of 5 per cent. was paid on January 17 on account of the year ending March 31 next. This is an increase of 2 per cent. on the interim for 1939-40.

**Gloucester Railway Carriage & Wagon Co. Ltd.**—Profits for half-year to November 30 last are entirely satisfactory, but having regard to existing conditions the directors have deemed it prudent to postpone consideration of dividend until annual accounts are available in July next. A year ago an interim of 5 per cent. was declared.

**Westinghouse Brake & Signal Co. Ltd.**—Net profits for year to September last were £159,781 (against £88,932), and £90,432 was brought in. General reserve receives £50,000 (£25,000), £5,000 is again placed to staff fund, and £25,000 (nil), is reserved for contingencies. The dividend is again 10 per cent., leaving £92,384 forward. The profit for the previous year was struck after making substantial reserves against contract losses.

# MINISTRY OF TRANSPORT ACCIDENT REPORT

## Gretna Junction, L.M.S.R.: November 5, 1940

Colonel A. C. Trench inquired into the accident which occurred at 6.9 p.m. on November 5, 1940, at Gretna Junction, L.M.S.R., when the 10.5 a.m. express, Euston to Perth, consisting of ten bogie coaches drawn by standard Compound 4-4-0 locomotive No. 1141, struck at about 45 m.p.h. the tender and wagons of the 8.55 a.m. goods, Shawfield to Carlisle, crossing the junction from the up branch line on the left and which had almost come to a stand. This consisted of 45 wagons and brake, drawn by 4-6-0 engine No. 14650. The passenger engine was derailed and thrown on its side, Driver Martin being killed; five leading coaches were derailed and badly damaged. The

junction interlocking between facing and trailing points is provided. All the evidence points to there having been no defect in the signalling equipment.

Fireman Russell, of the express, was confident that he and his driver had seen the down main distant off. He noticed no other signals and was unaware of the goods train until the collision, or of any brake application. Other evidence confirms that the signals were off and the speed of the express not checked at all. Had the goods train engine run a few yards further it would have burst the trailing points; it is clear that it must have passed one or more signals against it. Driver Stewart of the goods train said he found

intended to pass the goods train and had pulled off for it when the first track circuit was occupied. Immediately thereafter he might have realised that the express was approaching and decided to pass it first, entailing the replacing of the up branch signals re-setting of the junction, and lowering of the down main signals. A test showed this would take about 17 seconds, and a calculation indicated that 30 seconds, probably more, would elapse between the time when Stewart would see the outer home off and the express driver would see the down distant off. On the rising gradient, with a comparatively heavy train, Martin might not have made an immediate brake application, had he originally sighted it at caution. Dickson, however, strongly maintained that he had never any intention of allowing the goods to precede the express, accepting the former at 5.50 p.m. and receiving "entering section" from Eastgrigs, Gretna Green being closed, at 5.55 p.m. He was entitled to accept to the outer home, but did not set the road immediately, the section being 6 miles long. He accepted the express at 6.0 p.m., offered it forward at 6.5 p.m. on receiving "train approaching" and pulled off for it 2 minutes later on receiving "entering section."

### Inspecting Officer's Conclusions

Colonel Trench referred to the direct conflict of evidence between Dickson and Stewart, the latter partly corroborated by his fireman and guard. There seemed to be no possibility of other confirmatory evidence on either side. Both men were of long service and good record, well acquainted with the locality.

If Dickson's statement were accepted, Stewart must have passed both distants and the outer home against him, making no attempt to stop, or deferring it until too late. His evidence regarding the inner distant changing and outer home being found off must be false, and the evidence of the guard and fireman about the inner distant false as well. Stewart could hardly have been mistaken about these signals or lost his location, and was quite accustomed to being stopped at the outer home. The falling gradient does not begin till the inner distant, and there should be no question of his train overpowering him. If Stewart's evidence were accepted, then Dickson must have changed the road in front of the goods, without realising that it was too near to be stopped, although he firmly denied it. It seems an unlikely course on the part of an experienced signalman.

Colonel Trench considers it significant that Dickson got "entering section" for the goods five minutes before he heard anything about the express, and that a down branch passenger train was normally due about this time; this would not have interfered with the goods. It has unfortunately been impossible to ascertain when Dickson was telephoned from Carlisle that the express

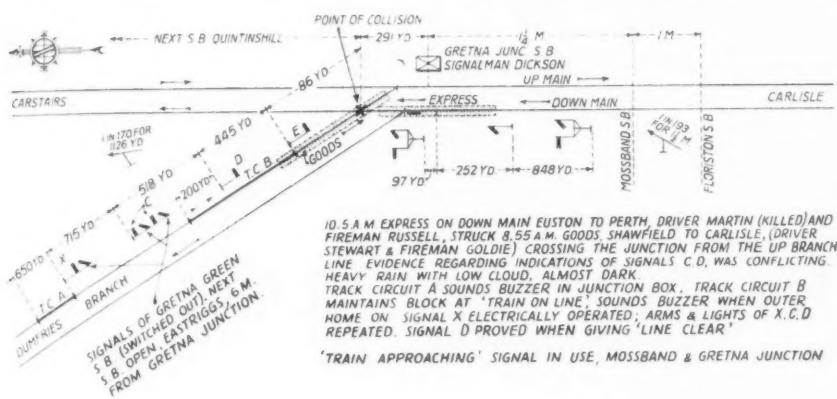


Diagram illustrating circumstances of Gretna Junction accident, L.M.S.R., November 5, 1940

tender and fifteen wagons of the freight train were derailed and the wagons wrecked. Forty-one passengers and the express firemen were injured, two passengers fatally. It was raining heavily, with much low cloud and almost dark. All practicable steps were taken to obtain assistance, despite blackout difficulties and some temporary delay in communicating with Carlisle. Railway officers expressed high appreciation of the assistance afforded by some troops in the train.

The important signals to consider are those passed by the goods train; evidence shows that the down main signals were off for the express. There is an up branch outer home, 445 yd. from the inner home, an inner distant (two co-acting arms under those of Gretna Green starting signal) 518 yd. further in rear, and an outer distant, electrically worked, under Gretna Green home, 715 yd. further still. In rear of this is a 650 yd. track circuit, sounding a buzzer in Gretna Junction box, and another beginning 200 yd. in rear of the outer home and extending to the inner, maintaining the block at "train on line" and sounding a buzzer in the box when the outer home, proved in giving "line clear," is on. Standard

both the Gretna Junction up branch distants at caution, and checked to 15 m.p.h. with the hand brake, expecting to have to stop at the outer home, a common procedure. The inner distant was pulled off before he reached it and he released the brake. Coming round the curve he found the outer home off and then the inner home on. With a full Westinghouse brake application on the engine (the wagons were unfitted) he almost managed to stop before reaching the junction. Fireman Goldie confirmed this; going to the box after the collision, he told Signalman Dickson that the signals were at clear; the latter replied that this was impossible. Guard Bryson also confirmed this evidence. He was on the point of applying his hand brake, when a second look at the inner distant showed him it had then been pulled off. He did not see the two home signals. This emphatic evidence, coupled with the unusual appearance of the inner distant post, four green lights, if all arms were off (making mistake in identification unlikely), made it necessary to investigate the possibilities of its correctness. The only possibility appeared to be that the signalman had originally

was for the main line and the branch passenger was following; until then he might assume that the next down train would be the latter. From calculations it may be assumed that had he originally set the road for the branch and heard the annunciator for the goods before he had information of the approach of the express, he might naturally pull off for the former and only on receiving "train approaching" (6.5 p.m.) or "entering section" (6.7 p.m.) realise that the latter should have precedence. He might have begun to change the road without looking at his illuminated diagram and, not realising how near the goods was, would have finished easily in time for the express driver to see a clear distant. Against this, is Dickson's claim to have sent "is line clear?" forward to Quintinshill at 6.5 p.m., on receiving "train approaching," after which he could hardly have contemplated pulling off for the goods to cross. The Quintinshill booking is 6.7 p.m. (after he might have pulled off for the goods). This timing of 6.5 p.m. Colonel Trench regards as not very reliable and regrets that he can offer only an opinion on this case based on apparent probabilities. He considers it more likely that Dickson, anxious not to delay the express, may have changed the road in the face of the goods, not realising it was too close to be able to stop clear.

The alternative, which appears to him less probable, is that Stewart, expecting the signals to be pulled off, took no proper steps to control his train until too close to the outer home, which he overran by 600 yd., and immediately arranged with the fireman and guard to support his unusual story of the inner distant being pulled off in his face. His being stopped at this junction on previous occasions also makes this seem unlikely.

Colonel Trench considers that there are no grounds for criticising the acceptance of trains up to the branch outer home with the junction blocked, in spite of the falling gradient approach. Two distant give ample warning; the outer home is beyond the prescribed distance. The arrangements for notifying Gretna Junction of the route of trains from the south might be improved, especially under the present conditions of frequent specials and "out of course" running. A special bell signal is sent from Floriston (2½ miles in rear) for trains to the branch, where a passing driver whistles for that route, but there is no signal for other trains. Such a negative signal is undesirable, now that there is less than normal disparity between the traffic on the two lines. Dickson did not, of course, receive a bell signal, but was informed by telephone from Carlisle, a common but not invariable procedure. The splitting distant do allow a driver to stop if wrongly routed, but the possibility of crossing movements make it important to know in good time the routing of all down trains. The company is recommended to consider means of improving the transmission of such information by positive signal, from Carlisle or elsewhere.

## Questions in Parliament

### Station Facilities

Mr. W. Glenvil Hall (Colne Valley—Lab.), on January 21, asked the Secretary of State for War if he was in a position to indicate the improvements effected at Crewe station for the comfort of Servicemen.

Captain H. D. Margesson: I would refer my hon. friend to the answer given to him on November 20 last. There has been some delay owing to the difficulty of obtaining materials, but, with the possible exception of boilers and gas stoves, it should be finished by the end of this month. Every endeavour is being made to hasten the delivery of the boilers and gas stoves.

Mr. Glenvil Hall also asked if the Secretary of State for War was aware that both the Forces canteen and the railway company's refreshment room on Stockport station were closed on Sundays.

Captain H. D. Margesson: The railway company's refreshment room at Stockport is not open on Sundays, but the Forces canteen which started on December 5 last has been open on Sundays from the start whenever a train arrives at the station.

Mr. Hall: Is the Minister aware that I was through that station on a Sunday quite recently, and that the Forces canteen was closed? Will he make further inquiries?

Captain Margesson: I most certainly will, but my information is that the canteen is open whenever a train arrives at the station.

### Distribution of Coal

Mr. David Grenfell (Secretary of Mines), on January 21, informed Mr. F. S. Cocks (Broxtove—Lab.), that he was aware that there were shortages of house coal in certain parts of the South of England, and he was doing what he could in consultation with the Minister of Transport to meet the situation. Arrangements had already been made for extra coal trains to be run at the expense of certain passenger services, and the additional trains would be used for household as well as for public utility and high priority industrial purposes.

Asked by Mr. Cocks when the arrangement of extra trains started, Mr. Grenfell stated it started in the last week or two. Many efforts had been made to expedite the movement of mineral traffic.

Mr. Cocks next asked the Secretary for Mines what steps had been taken since December 17 to deal with the position in Nottinghamshire, where the pits had been working short time, owing to the difficulty of getting away the coal; whether there had been any improvement, and whether any further steps were contemplated.

Mr. David Grenfell: I am informed that every effort has been made to increase the supply of empty wagons to the Midland coalfields and to Nottinghamshire in particular. The number of

man-days lost in the latter county owing to transport difficulties and shortage of wagons has been reduced from 52,152 in the week ended December 14 to 12,322 in the week ended January 4, the latest week for which figures are available.

### Cloakroom Charges

Mr. H. W. Butcher (Holland-with-Boston—Lib. Nat.), on January 22, asked the Minister of Transport whether he was aware that the railway companies had increased their charges for deposit in their cloakrooms from 3d. to 4d. an article, what justification there was for this increase of 33½ per cent., and whether he would arrange for a reduction.

Lt.-Colonel J. T. C. Moore-Brabazon: The increase from 3d. to 4d. is in accordance with my recent Order, under which the charges were increased on December 1, 1940, by 16½ per cent., subject to the rule that in determining the amount of the additional charge fractions of 1d. if less than one half are to be dropped and if one half or more are to be charged as 1d.

Mr. Butcher: Is the Minister aware that the increase is levied on every article and that if three articles are deposited the charge is raised from 9d. to 1s.

Lt.-Colonel Moore-Brabazon: You must relate it to the individual pieces. You cannot relate it to the whole thing.

### Monthly Return Tickets

Mr. J. Parker (Romford—Lab.), on January 22, asked the Minister of Transport whether arrangements could be made to extend the period during which monthly return tickets were available to three months for the duration of the war.

Mr. F. Montague (Parliamentary Secretary to the Ministry of Transport): No, Sir. The monthly return ticket rate represents a substantial reduction, granted originally to attract traffic. In present conditions, I see no justification for encouraging travel of the type which would be assisted by return tickets at reduced rates available for a period in excess of a month.

### G.W.R. Travel Facilities

Dr. H. B. Morgan (Rochdale—Lab.), on January 22, asked the Minister of Transport why cheap travel facilities were denied to parents wishing to visit evacuated children at week-ends in places served by the Great Western Railway; whether this was in accordance with the practice of other railway companies; and whether he would consider bringing the system into conformity to allow of cheap travel facilities on all lines at week-ends.

Lt.-Colonel Moore-Brabazon, in a written reply, stated: As I announced on December 5 in reply to a question by the Member for Bethnal Green (Mr. Chater), the restrictions on the G.W.R. system have been removed. The facilities have been available since that date on all railway systems on any day of the week.



## Notes and News

**Seaboard Airways.**—Towards the end of last year a new U.S.A. air line company, called Seaboard Airways Inc., was formed. It is a subsidiary of the Seaboard Air Line Railway, and has applied for permission to operate air services between Boston, Miami, and New Orleans, for passengers, express freight, and mails.

**Argentine Gifts to Britain.**—The non-British staffs of the Buenos Ayres Great Southern, Buenos Ayres Western, and Buenos Ayres Midland railway companies have just sent home through the British Community Council £11,000 for the purchase of two ambulances to be presented to the City of London Red Cross, and £3,000 for the purchase of mobile canteens to be presented to His Majesty's Government for any purchases it may see fit. These sums have been voluntarily subscribed in small contributions from the workers on the railways, who number many thousands.

**The Permanent Way Institution.**—The fifty-seventh annual winter general meeting of the Permanent Way Institution was held at the Charing Cross Station Hotel on Saturday last, January 25, with Mr. F. E. Harrison, President, in the chair. Letters of apology at inability to attend were received from many members, among which were Messrs. R. Carpmal, A. R. Cooper, G. Ellson and W. K. Wallace, Past Presidents. A joint report by the Honorary Secretary and Honorary Treasurer was submitted which gave particulars of the activities and financial position of the institution during the past year. This dealt with sectional meetings, new sections, membership, journals, and the financial details of subscriptions, expenditure, investments, etc. It was also noted that up to date 102 members are serving with H.M. Forces. Mr. F. E. Harrison was re-elected President for the coming year, and in expressing thanks he remarked that they were passing through difficult times for carrying out the usual activities of the institution, but he hoped that sections would make an effort to hold one or two meetings in the spring. Mr. Harrison said he was pleased to think

that the Permanent Way Institution had done something to contribute to overcoming some of the difficulties which had been experienced on the railways recently, and he hoped that the next general meeting would be held under happier conditions. The following were elected as Vice Presidents: Messrs. D. R. Bennett (England), R. C. Rattray (Scotland), P. A. Arnott (Ireland), J. H. Kirk (Wales), F. J. C. Hanson (India), C. Mackinnon (Sudan). The present officers were re-elected, viz., H. Janes (Secretary), F. Lawson (Treasurer), J. Ratter (Editor), J. H. Knotts and D. F. Soundy (Auditors).

**Compagnia Italiana Turismo (C.I.T. England) Limited.**—Notice is given in *The London Gazette* that creditors of the company are required to send their names and addresses and particulars of their claims, by February 14, to the liquidator, Mr. D. H. Allan at 17, St. Helen's Place, London, E.C.3.

**Two New South African Revenue Records.**—The South African Railways & Harbours administration announces that two further revenue records have been created recently. The revenue for the week ended November 23, 1940, totalled £767,017 and that for the week ended November 30, £771,303. The previous record of £725,395 was set up in the week ended September 28, 1940.

**Wiesbaden Station Renaming.**—A recent example of German standardisation is the renaming of the Wiesbaden stations, which has resulted in a spate of wrongly-directed consignments, according to the German railway publications. The old and new names of the stations concerned are as follow:—

Wiesbaden Sud has become Wiesbaden Hauptbahnhof  
Wiesbaden Biebrich has become Wiesbaden Sud  
Wiesbaden Rheinbahnhof has become Wiesbaden Biebrich

**Freight Rate Increases in Eire.**—The Railway Tribunal will sit at the Four Courts, Dublin, at 11 a.m., on February 11, to consider an application by the Great Northern Railway Company (Ireland) for increases in its rates and charges in force on July 23, 1924, for the carriage of merchandise by merchandise and by passenger train on those portions of its undertaking which are situate in Eire.

## Forthcoming Meetings

Jan. 31 (Fri.).—Midland Railway Co. of Western Australia Limited (Ordinary general), Winchester House, Old Broad Street, E.C., at 11.30 a.m.

Jan. 31 (Fri.).—Fishguard & Rosslare Railways & Harbours Company (Half-yearly ordinary), Paddington Station, London, W.2, at 1 p.m.

## British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices	
			Jan. 28, 1941	Rise/ Fall
G.W.R.				
Cons. Ord. ... ..	52	22½	35	—1
5% Con. Pref. ... ..	103½	58	88	—½
5% Red. Pref. (1950) ... ..	107½	88	99½	+2
4% Deb. ... ..	107½	90½	105½	—½
4½% Deb. ... ..	108½	96½	108	—
4½% Deb. ... ..	114½	96	113½	—
5% Deb. ... ..	124	106	122½	+1
2½% Deb. ... ..	66½	57	63	+2
5% Rt. Charge ... ..	117½	97	118	+1
5% Cons. Guar. ... ..	117	90½	114	—1½
L.M.S.R.				
Ord. ... ..	24½	9	14	—½
4% Pref. (1923) ... ..	60½	21½	37½	—2½
4% Pref. ... ..	70½	35	52½	—1½
5% Red. Pref. (1955) ... ..	94½	60	79½	+3
4% Deb. ... ..	101½	81	100½	+½
5% Red. Deb. (1952) ... ..	109½	102	108	—
4% Guar. ... ..	93½	65	89	—
L.N.E.R.				
5% Pref. Ord. ... ..	8½	1½	3	+½
Def. Ord. ... ..	4½	1½	1½	—
4% First Pref. ... ..	60	20	36½	—1
4% Second Pref. ... ..	22½	6½	11½	—½
5% Red. Pref. (1955) ... ..	80	34½	57½	+4
4% First Guar. ... ..	86½	56	78½	—1
4% Second Guar. ... ..	77½	37	64½	+2
3% Deb. ... ..	73½	54½	70½	—½
4% Deb. ... ..	97½	74	93	—
5% Red. Deb. (1947) ... ..	107	96½	103	—
4½% Sinking Fund Red. Deb. ... ..	104	98	100½	—
SOUTHERN				
Pref. Ord. ... ..	79	34	50½	—1
Def. Ord. ... ..	22½	7	11½	—½
5% Pref. ... ..	104½	58½	87	—
5% Red. Pref. (1964) ... ..	105	85	91½	+2
5% Guar. Pref. ... ..	116½	90	114	—1
5% Red. Guar. Pref. (1957) ... ..	114½	94	109½	—
4% Deb. ... ..	106½	84½	105½	—½
5% Deb. ... ..	122½	100	122½	+3
4% Red. Deb. (1962-67) ... ..	106	96½	103	+2½
4% Red. Deb. (1970-80) ... ..	106½	93	103	+2½
FORTH BRIDGE				
4% Deb. ... ..	95½	87	86½	—
4% Guar. ... ..	93½	81½	84½	—
L.P.T.B.				
4½% "A" ... ..	116	103	111½	—
5% "A" ... ..	121½	107	118	+1½
4½% "T.F.A." ... ..	105½	101	102½	—
5% "B" ... ..	116	102	106	—
"C" ... ..	65½	24	34	—
MERSEY				
Ord. ... ..	26	18½	23½	+1
4% Perp. Deb. ... ..	92½	86½	91½	—
3% Perp. Deb. ... ..	68	63	60½	—
3% Perp. Pref. ... ..	57	50½	54½	—
IRELAND				
BELFAST & C.D.				
Ord. ... ..	4	3	4	—
G. NORTHERN				
Ord. ... ..	4½	1½	4½	+½
G. SOUTHERN				
Ord. ... ..	12½	4	6½	—
Pref. ... ..	15½	6	10	—½
Guar. ... ..	36	15	26	+1
Deb. ... ..	55½	40	53	—1

\* ex-dividend

## Irish Traffic Returns

IRELAND	Totals for 2nd Week			Totals to Date		
	1941	1940	Inc. or Dec.	1941	1940	Inc. or Dec.
	£	£		£	£	
Belfast & C.D. (80 miles)	pass. 2,781 goods 1,103 total 3,884	2,279 571 2,850	+ + +	£ 502 532 1,034	£ 6,390 2,133 8,523	+ + +
Great Northern (543 miles)	pass. 10,600 goods 14,650 total 25,250	8,200 11,400 19,600	+ + +	2,400 3,250 5,650	22,750 28,150 50,900	+ + +
Great Southern (2,076 miles)	pass. 32,837 goods 50,974 total 83,811	26,548 41,577 68,125	+ + +	£ 6,289 9,397 15,686	£ 65,311 104,474 169,785	+ + +
L.M.S.R. (N.C.C.) (247 miles)	pass. 6,380 goods 6,510 total 12,890	3,820 3,120 6,940	+ + +	2,560 3,390 5,950	12,580 6,070 14,000	+ + +
					£ 841 853 1,694	
					£ 5,549 1,280 6,829	
					£ 56,162 85,143 141,305	
					£ 7,930 6,070 14,000	
					£ 9,149 19,331 28,480	

## Railway Stock Market

Absence of improvement in Stock Exchange business has resulted in a moderate reaction in security values, but many stocks and shares remained in short supply in the market, and no more than the normal volume of selling was reported. At the time of writing, markets appear to be developing a firmer trend, under the lead of British Funds; sentiment in the gilt-edged section has been assisted by the decision of the L.C.C. to redeem its 5 per cent. consolidated stock, 1940-60. Home railway securities have been reactionary in accordance with the surrounding tendency, but no heavy declines were shown, although the market is now taking a more cautious view of the forthcoming dividends on the junior stocks, induced by estimates of the receipts for the past year. As suggested here, the market recently appeared to be taking a slightly optimistic view of dividends, but that nevertheless, based on the guaranteed net revenues, payments can be expected which would show generous yields. Bearing in mind uncertainties as to the basis on which the financial agreement with the Government is to be adjusted, it cannot, of course, be expected that reserves will be

drawn on to increase dividend payments. Prior-charge stocks have shown a firmer undertone this week than the junior issues, and in many cases they continue to offer yields which compare favourably with those on other high-class investment stocks. In some quarters it is being suggested that L.N.E.R. second guaranteed is over-valued in relation to L.M.S.R. senior preference, and an exchange into the latter is being indicated as worth while. It would seem, however, that this, and other suggestions for increasing the average yield on home railway holdings by transferring into stocks of a slightly lower grade, may very well be left until the railway outlook under war conditions can be more clearly defined.

As compared with a week ago, Great Western ordinary stock has reacted a point to 35. On the other hand, the preference stock was unchanged at 88½, and the guaranteed at 115½, and the 4 per cent. debentures at 106, were also unchanged on balance. L.M.S.R. preference stocks reflected some profit-taking following their recent improvement; the senior preference was one and a half points down at 52½, and the 1923 preference went back three points to 37. Neverthe-

less, L.M.S.R. ordinary stock showed only a fractional decline, and the debentures were maintained; the guaranteed was moderately better at 89½. L.N.E.R. guaranteed stocks, now quoted "xd" each lost half-a-point, the first being 78½ and the seconds 65. L.N.E.R. first preference at 36 and the second preference at 11½, were also lower on balance for the week. On the other hand, L.N.E.R. 4 per cent. and 3 per cent. debentures continued to hold their recent improvement to 94 and 74½ respectively. Southern preferred, however, moved back from 51½ to 49½, at which the yield exceeds 10 per cent., but the deferred stock was little changed at 11½, compared with 11½ a week ago. Southern preference was again 87, and moreover, the guaranteed stock kept at 115½, and the 4 per cent. debentures were maintained at 106. Some buying of London Transport "C" was reported; business was around the slightly better level of 34½.

In other directions there was a little speculative activity in French railway sterling bonds, which improved moderately in price, but foreign railway securities generally were inactive, and Argentine railway debentures tended to lose their recent small gains. Canadian Pacific subsequently became firmer; the preference stock was 51½ against 50.

### Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1940-41	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices						
			Total this year	Inc. or Dec. compared with 1932		Totals		Increase or Decrease		Highest 1940	Lowest 1940	Jan. 28, 1941	Yield % (Note)			
						This Year	Last Year									
South & Central America																
Antofagasta (Chili) & Bolivia	834	19.1.41	£ 19,120	—	£ 1,260	3	£ 49,280	£ 55,330	—	£ 6,050	Ord. Stk.	11½	3½	4½	Nil	
Argentine North Eastern ...	753	18.1.41	ps. 121,400	+	ps. 4,600	29	ps. 4,522,000	ps. 4,642,300	—	ps. 120,300	6 p.c. Deb.	3½	1	2	Nil	
Bolivar ...	174	Dec. 1940	2,700	—	1,301	52	45,200	51,531	—	6,331	Bonds	8	5	6½	Nil	
Brazil ...	2,801	18.1.41	ps. 1,697,000	+	ps. 202,000	29	ps. 35,133,000	ps. 36,208,000	—	ps. 1,075,000	Ord. Stk.	4½	1	2	Nil	
Buenos Ayres & Pacific	190	23.11.40	£ 73,100	—	£ 818,100	21	£ 1,926,300	£ 2,301,500	—	£ 375,200	Ord. Stk.	10½	3	5	Nil	
Buenos Aires Central	5,082	18.1.41	ps. 2,326,000	—	ps. 707,000	29	ps. 57,613,000	ps. 62,215,000	—	ps. 4,602,000	Ord. Stk.	8½	2	4	Nil	
Buenos Ayres Great Southern	1,930	18.1.41	ps. 773,000	—	ps. 176,000	29	ps. 19,945,000	ps. 21,797,000	—	ps. 1,852,000	"	8½	2	3	Nil	
Buenos Ayres Western	3,700	18.1.41	ps. 1,683,150	+	ps. 34,350	29	ps. 40,842,150	ps. 52,647,100	—	ps. 1,804,950	"	8½	2	3	Nil	
Do.	—	—	—	—	—	—	—	—	—	—	Dfd.	4	½	1½	Nil	
Cent. Uruguay of M. Video	972	18.1.41	28,014	+	4,209	29	603,755	569,555	+	34,200	Ord. Stk.	3½	1½	1½	Nil	
Costa Rica ...	188	May 1940	17,282	—	7,020	48	193,339	245,516	—	52,177	Ord. Stk.	23½	14	16½	12½	
Dorada	70	Dec. 1940	12,300	—	1,800	52	146,500	164,500	—	18,000	1 Mt. Db.	99	97½	98	6½	
Entre Rios	810	18.1.41	ps. 203,900	—	ps. 64,100	29	ps. 6,346,800	ps. 7,293,100	—	ps. 946,300	Ord. Stk.	4	½	1½	Nil	
Great Western of Brazil	1,016	18.1.41	13,600	—	200	3	31,400	37,400	—	6,000	Ord. Sh.	4/-	1/-	1½	Nil	
International of Cl. Amer.	794	Sept. 1940	\$325,789	—	\$37,196	39	\$4,405,419	\$4,486,381	+	\$80,962	Ist Pref.	9d.	9d.	1	Nil	
Interoceanic of Mexico	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
La Guasira & Caracas...	224	Dec. 1940	4,730	—	2,455	52	77,230	74,961	+	2,269	Ord. Stk.	2½	4	4	Nil	
Leopoldina ...	1,918	11.1.41	23,213	+	1,627	2	34,351	34,693	—	342	Ord. Stk.	2½	½	½	Nil	
Mexican	483	7.10.40	ps. 270,900	—	ps. 300	14	ps. 3,816,500	ps. 3,954,000	—	ps. 137,500	"	2/11½	4	4	Nil	
Midland of Uruguay...	319	Nov. 1940	11,009	+	255	22	56,627	45,218	+	11,409	"	2/11½	4	4	Nil	
Nitrate	386	15.1.41	4,547	—	5,378	2	4,547	9,925	—	5,378	Ord. Sh.	2½	1½	1½	7½	
Paraguay Central	274	18.1.41	\$2,267,000	—	\$527,000	29	\$95,003,000	\$94,102,000	—	\$901,000	Pr. Li. Stk.	41	36	36	16½	
Peruvian Corporation	1,059	Dec. 1940	64,856	—	2,585	26	393,325	383,935	+	9,390	Pref.	4	1	2	Nil	
Salvador ...	100	2.11.40	7,687	—	925	18	£158,338	£174,282	—	£15,944	Ord. Stk.	50	23	28	8½	
San Paulo ...	153½	12.1.41	35,000	+	7,630	2	72,500	53,858	+	18,642	Ord. Sh.	15/1½	8	8	9½	
Talca ...	160	Dec. 1940	3,205	—	395	26	17,140	14,140	—	3,000	Ord. Stk.	15/1½	8	8	9½	
United of Havana	1,353	18.1.41	17,041	+	2,231	29	435,872	493,121	—	57,249	Ord. Stk.	8	8	8	Nil	
Uruguay Northern	73	Nov. 1940	1,363	+	208	22	5,571	4,809	+	762	"	—	—	—	—	
Canada																
Canadian National ...	23,695	21.1.41	936,110	+	173,446	3	2,779,695	2,234,933	+	544,762	Perp. Dbs.	86	68	89	4½	
Canadian Northern	—	—	—	—	—	—	—	—	—	4 p.c.	105½	95½	103½	3½		
Grand Trunk	—	—	—	—	—	—	—	—	—	Ord. Gar.	9½	4½	8	Nil		
Canadian Pacific	17,153	21.1.41	655,200	+	144,000	3	1,944,200	1,525,400	+	418,800	Ord. Stk.	99½	71	99	3	
India																
Assam Bengal...	1,329	30.4.40	45,187	+	6,529	4	135,060	120,437	+	14,623	Ord. Stk.	99½	71	99	3	
Barsi Light	202	30.11.40	3,660	—	2,910	34	105,555	82,132	+	23,423	Ord. Stk.	283	234	260	6½	
Bengal & North Western	2,086	Dec. 1940	238,500	—	1,638	13	732,825	661,335	+	71,490	Ord. Stk.	218½	195	225	5½	
Bengal Doars & Extension	161	Sept. 1940	14,625	+	508	26	78,405	66,243	+	12,162	"	96	83½	96½	4½	
Bengal-Nagpur	3,269	30.11.40	257,850	+	24,432	34	5,714,628	5,151,941	+	562,687	"	108	99	107½	5½	
Bombay, Baroda & Cl. India	2,986	10.1.41	301,650	+	32,850	41	7,613,025	6,930,450	+	682,575	"	104	97½	102½	7½	
Madras & Southern Mahratta	2,967	30.11.40	164,400	+	2,065	34	3,959,491	3,736,459	+	223,032	"	284	238	260	6½	
Rohilkund & Kumaon	571	Dec. 1940	54,450	+	317	13	144,075	135,650	+	8,245	"	93½	83	87½	5½	
South Indian ...	2,542	20.11.40	113,796	+	32,907	32	2,910,150	2,597,195	+	312,955	"	—	—	—	—	
Various																
Beira ...	204	Nov. 1940	69,360	—	1,784	26	89,819	94,881	—	5,062	Prf. Sh.	7/10½	4	4	Nil	
Egyptian Delta	623	30.9.40	7,602	—	—	—	—	—	—	—	B. Deb.	53	44½	46½	7½	
Kenya & Uganda	1,625	—	—	—	—	—	—	—	—	—	Inc. Deb.	88	80	85½	—	
Manila ...	277	July 1940	11,397	+	139	4	11,397	11,258	+	139	Inc. Deb.	88	80	85½	—	
Midland of W. Australia	1,900	26.10.40	31,270	+	7,575	30	1,059,899	874,277	+	185,622	"	—	—	—	—	
Nigerian	2,442	Nov. 1940	474,933	—	—	9	976,223	23,953,923	+	1,587,011	"	—	—	—	—	
Rhodesia	13,287	14.12.40	781,073	+	89,087	37	25,540,934	1,383,157	+	373,560	"	—	—	—	—	
South Africa	4,774	Aug. 1940	888,289	+	190,022	9	1,756,717	—	—	—	"	—	—	—	—	
Victoria	—	—	—	—	—	—	—	—	—	—	"	—	—	—	—	

Note. Yields are based on the approximate current prices and are within a fraction of ½. Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffic is now given in pesos